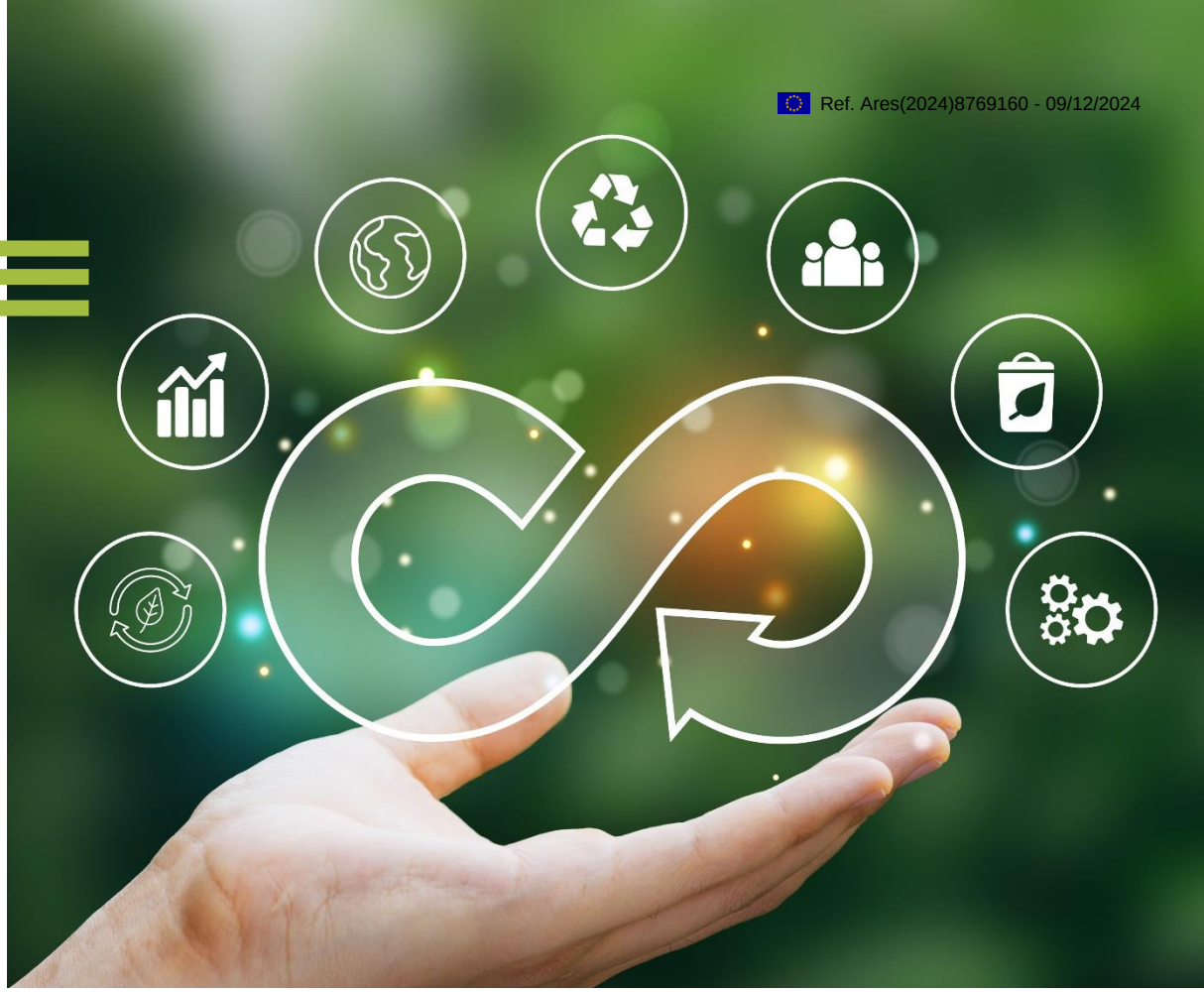

ECOLOOP

www.ecoloop-project.eu

Deliverable 1.2: Data Management Plan

Funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them. Horizon Europe Grant agreement № 101118127.

Deliverable details

Title	WP	Version
Deliverable 1.2: Data Management Plan	1	1.0

Contractual delivery date	Actual delivery date	Delivery type*	Dissemination**
30/03/2024 (M6)	30/03/2024 (M6)	DMP	PU

*Delivery type: R: Document, report; DEM: Demonstrator, pilot, prototype; DEC: Websites, patent fillings, videos, etc; DMP: Data management plan.

Dissemination Level: **PU - Public; **SEN** – Sensitive, limited under the conditions of the Grant Agreement.

Author(s)	Organization
Lola Alacreu	ETRA

Version	Date	Person	Action	Status***
0.1	15.02.2024	Lola Alacreu (ETRA)	Document created	Draft
0.2	01.03.2024	Kai Vogelhaupt (Albena) Klemen Kosovinc (SETUP) Jernej Zupančič (IRI UL) Reimo Lutter (EULS) Katri Ots (EULS) Konstantin Stoyanov (Trakia)	Peer review of the document	Draft

		Andreja Žibrat-Gašparič (KIS) Špela Kodre (KIS)		
1.0	25.03.2024	Lola Alacreu (ETRA)	Final version of the document	Final

***Status: Draft, Final, Approved, Submitted (to European Commission).

Keywords

Data Management Plan, DMP, FAIR, interoperable, open, IPR.

Index

List of figures

List of tables

Executive Summary

The Data Management Plan (DMP) is a living document that aims to provide an analysis of the main elements of the data management policy that will be used by the ECOLOOP Consortium regarding the project research data.

This document will evolve during the development of the project, when the project progresses and when significant changes occur, to keep an updated version of the guidelines and recommendations for making the research data Findable, Accessible, Interoperable and Reusable (FAIR) and therefore contribute to knowledge discovery and innovation.

The current version is the initial version in which we present the envisioned data management strategy and make a first effort to plan the definition of the types of research data that will be generated or collected during the project, how the research data will be deposited and what parts of the datasets will be shared for verification or reuse.

Copyright statement

Acknowledgement

This project has used a standard methodology already developed in OPENTUNITY project, Deliverable 3 (DMP) (Grant Agreement number: 101096333), ODEON project, Deliverable 4 (DMP) (Grant Agreement number: 101136128), STREAM project, Deliverable 2 (DMP 1) (Grant Agreement number: 101075654), and R2D2 project, Deliverable 2 (DMP) (Grant Agreement number: 101075714), following EU recommendations. Ad hoc modifications were added to comply with the Grant Agreement conditions for ECOLOOP (Grant Agreement number: 101118127).

1 Introduction

1.1 Purpose of the document

The purpose of the Data Management Plan (DMP) is to provide an analysis of the main elements of the data management policy that will be used by the ECOLOOP Consortium regarding the project research data.

The DMP is not a fixed document; on the contrary, it will evolve during the lifespan of the project. This DMP will be a living document in which information will be available on a finer level of granularity through updates as the implementation of the project progresses and when significant changes occur.

This first version of the DMP aims to outline how the ECOLOOP project will try to make the research data findable, accessible, interoperable, and reusable (FAIR) and therefore contribute to knowledge discovery and innovation. The objective is to lay the foundations for creating an effective data management strategy covering the complete research data life cycle.

1.2 Scope of the document

The scope of this deliverable is to cover the entire life cycle of research data. This data management plan, which will be updated when needed, will serve as a guide by the ECOLOOP consortium on how to manage the research data during and after the end of the project. The current deliverable is the first version presenting the planned data management strategy. It provides an initial definition of the types of research data that will be generated or collected during the project, how the research data will be deposited and what portions of the datasets will be shared for review or reuse.

1.3 Structure of the document

This deliverable follows the template provided by the services of the European Commission (EC) Horizon Europe Data Management Plan Template [1] adapted to follow ECOLOOP document procedures.

The document is organized in eight sections:

- Introduction (section 1).
- Data Summary (section 2).
- Fair Data (section 3).
- Other research Output (section 4).
- Allocation of resources (section 5).
- Data security (section 6).
- Ethics (section 7).
- Conclusions (section 8).

2 Data summary

2.1 Purpose of Data Management and relation to the project

ECOLOOP project develops and demonstrates a set of solutions to optimise the combination of different distributed renewable energy sources (biogas, biomass, agri-PV, geothermal), meeting the local needs for electricity, heating, cooling, transport and waste and land management in rural areas, fostering regional development and creating benefits for farmers and foresters. The project solutions focus on promoting the reduction of energy consumption and carbon footprint in rural areas through the higher penetration of renewable distributed energy sources and materials, self-consumption and optimal agricultural/forest waste management, while creating positive effects in biodiversity and soil health and reducing the risk of groundwater contamination.

ECOLOOP is fully committed to following and upholding the FAIR principles [2] for the management of data. This applies not only to the data produced by the project as output but also to the data used for the experimentation during the project.

ECOLOOP project will adopt the Open Science approach in various aspects of the project such as Open access to research outputs such as publications, and workflows or participation in an open peer-review process.

It will comply with European recommendations regarding Data Management Plans, providing clear procedure for findable, accessible, interoperable, and re-usable (FAIR) data and updating the current document along the development of the project.

The purpose of the DMP is to provide an analysis of the main elements of the data management policy that will be used by the Consortium about the project research data. The DMP reflects consortium data management policies, systems, and procedures - which will be implemented and embedded into research procedures and regularly reviewed throughout the research cycle.

The ECOLOOP consortium will strive to make data open but cannot overrule limitations that partner institutions put on data that they contribute (as specified in their Background included in

the ECOLOOP Consortium Agreement- Attachment 1). Moreover, an ethical approach will be adopted and maintained throughout the fieldwork process. The responsible partners will assure that the EU and the institution standards regarding ethics and Data Management are fulfilled.

2.2 Data Set Types, Formats and Standards

The type of data collected and generated by the project will range from simple numeric measurements (integers or floats) to geospatial data, including geolocated images, network representation in standardized format or consumption/production profiles of high granularity. Therefore, the deposition, integration and management of distributed data is fundamental to the work performed in ECOLOOP and, necessarily, must be in line with the FAIR principles.

Throughout the project, ECOLOOP will gather (and generate) a variety of data. Broadly, the data falls into three categories:

- Organizational data – data relevant to the implementation of the Innovation action.
- Technical and scientific data – this includes raw and processed experimental data, scientific analyses/publications as well as software code and algorithms.
- Personal data – from pilot users that will give us access to data involving their consumption and patterns of behaviour to better optimize the energy performance.

The detailed definition of the different types, formats and standards of the data to be collected, processed and/or generated during the project will be done in the framework of WP4, more specifically in task T4.1 Big data analytics (IoT ecosystem) defining technical and organizational data to develop the ECOLOOP ecosystem.

ECOLOOP assumes that all its research data will be available on reasonable request. However, there will be data that needs to be anonymized or obfuscated before publication, to protect industrial property rights; to protect personal data; because of confidentiality reasons with regards to security; and because the project objectives could be jeopardized. This holds specially for personal information according to the GDPR and the specific national and European laws for protection personal data.

Enforced in the ECOLOOP Grant Agreement Article 17, any dissemination of research data from ECOLOOP will include the disclaimer “Funded by the European Union”. The emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands, or text.

2.3 Re-Use of Data

Throughout the project, existing research findings, publications, and other pertinent information that is accessible will be examined. The primary purpose of this analysis will be to conduct internal project assessments, and the relevant information will be included in the appropriate project deliverables with appropriate attribution to the sources.

During the project´s lifetime, available results from other research activities, publications, and further relevant information available will be analysed. This information will be mainly used for internal project studies and will be provided in respective project deliverables with appropriate references to the origins of the gathered information.

Moreover, ECOLOOP will use and exploit some of the preliminary solutions and technologies developed in various Horizon Europe and H2020 projects like: Opentunity [3], X-FLEX [4] and COMPILE [5]. These projects are expected to form the basis of some of the ECOLOOP Innovation activities, complementing and going beyond the work done in these projects, providing new and more advanced services.

2.4 Updates of the DMP

As defined on the Description of Action (DoA), the D4.1 – AI and Big data analytics (to be submitted on M24) (reporting the work performed on Task 4.1) will more deeply specify the data gathered and the technical definition of the ECOLOOP ecosystem. It will complement the DMP information and will describe the details of the types and formats of data to be handled.

In this context, in Month 6 (due month for the current deliverable) the project is not yet in the position to provide a detailed list of the data sets of the project, neither the formats, nor specific standards to be used. As previously indicated, the Data Management Plan is a living document that will be updated over the course of the project whenever significant changes arise, such as new data, modification in consortium policies, changes in consortium composition, external factors, etc.

3 Fair Data

The FAIR principles describe four key concepts in research data management. Data should be:

- **Findable –** Easy to find by both humans and computer systems and based on mandatory description of the metadata that allows the discovery of interesting datasets.
- **Accessible** – Long term storage so data can be easily accessed and/or downloaded with well-defined license and access conditions, whether at the level of metadata, or at the level of the actual data content.
- **Interoperable** – Ready to be combined with other datasets by humans, as well as computer systems.
- **Reusable** – Ready to be used for future research and to be processed further using computational methods.

3.1 Making Data Findable, Including Provisions for Metadata

Identification and localisation will be used for the data to be processed during ECOLOOP project. The data to be generated in ECOLOOP project will be identifiable and locatable through unique identification mechanisms. Files will be uniquely identifiable by using standardised name conventions and clear versioning. These conventions for the documents are already provided in D1.1 Project Management Plan.

ECOLOOP project research data will be inventoried and annotated with metadata following the discoverability standards promoted by the Data Catalogue (DCAT) Application Profile [6]:

"It is important to ensure that your data can be found. The term usually applied to this is the discoverability of data. Essential for discoverability is metadata. Metadata describes the dataset itself (e.g., date of creation, title, content, author, type, size). This information about the data needs to be added to the catalogues to help discover the data. Metadata needs to be both human understandable and machine readable. If it is published as Linked Data, the discoverability of the data is greatly increased. Metadata does not only serve the purposes of description and discovery, but also renders itself as essential for the scope of contextualisation (relevance, quality,

restrictions (rights, costs)), as well as for matching users and software to data available on the internet."

The Dublin Core metadata standard is a straightforward and efficient element set used to describe various networked resources. The metadata landscape, as perceived by the Dublin Core community, is currently divided into four levels of interoperability and 15 sections for data description; these interoperability levels and sections are resumed in the tables below:

Table 1: Dublin Core Metadata Element Set - 4 Interoperability Levels

Dublin Core Levels of interoperability	
Level 1: Shared term definitions	Shared vocabularies defined in natural language
Level 2: Formal semantic interoperability	Shared vocabularies based on formal semantics
Level 3: Description Set syntactic interoperability	Shared formal vocabularies in exchangeable records
Level 4: Description Set Profile interoperability	Shared formal vocabularies and constraints in records

Table 2: Dublin Core Metadata Element Set - 15 Elements Overview

Contributor	An entity responsible for making contributions to the resource
Coverage	The spatial or temporal topic of the resource, the spatial applicability of the resource, or the jurisdiction under which the resource is relevant
Creator	An entity primarily responsible for making the resource
Date	A point or period of time associated with an event in the lifecycle of the resource
Description	An account of the resource
Format	The file format, physical medium, or dimensions of the resource
Identifier	An unambiguous reference to the resource within a given context
Language	A language of the resource
Publisher	An entity responsible for making the resource available
Relation	A related resource
Rights	Information about rights held in and over the resource
Source	A related resource from which the described resource is derive
Subject	The topic of the resource
Title	A name given to the resource
Type	The nature or genre of the resource

The fifteen elements "Dublin Core" described in this standard are part of a larger set of metadata vocabularies and technical specifications maintained by the Dublin Core Metadata Initiative (DCMI). The fifteen element descriptions have been formally endorsed in the following standards:

- ISO 15836-2:2019
- ANSI/NISO Standard Z39.85-2012 of February 2013,
- IETF RFC 5013 of August 2007.

The DCAT Application Profile utilizes Dublin Core standards as a foundation, but it is not a vocabulary. Rather, it is a straightforward specification used for describing metadata for EU governmental data and portals.

The metadata will be made public alongside the data in a machine-readable format, utilizing standard terminology to define the metadata. The metadata will also describe the overall features of the dataset, including information about local parameters, license, origin, and quality. The European Data Portal has established best practices for using DCAT-AP, and the ECOLOOP partners will adhere to them.

3.2 Making Data Accessible

An analysis of which ECOLOOP research data will be made openly accessible and which data will be kept closed will be done at a later stage of the project. The starting point is the definition of all types of research data to be handled and generated during and after the end of the project. Once this action is done, the data accessibility analysis will be carried out including the specification of software tools required to access the data. The outcome shall be implemented in the potential coming versions of the DMP. At the current stage, this analysis would not make much sense since the datasets are not defined yet.

During the project lifetime, information on the following aspects will be elaborated for all datasets on case-by-case basis, before making consortium decision on handling of the particular data generated or collected:

- Nature and scale of the data in consideration,
- To whom it could be useful / targeted audience and its size / level of interest,
- Information on the existence of similar data and possible synergies,

- Possibility for integration and reuse of the provided data by external users / researchers, and
- Any further related issues.

In general terms, ECOLOOP research data will be made available, when possible, without compromising privacy, ethical or commercial sustainability, to parties with a legitimate research interest. In the case of ECOLOOP, certain research data – especially considering the pilot sites – is sensitive due to security issues and therefore will be kept confidential.

3.2.1 Open research data repository

To ensure open access to research data sets, the ECOLOOP project will utilize Zenodo (https://zenodo.org/communities/ecoloopproject) [7], an established European online scientific repository that is fully integrated with OpenAIRE. Decisions on whether to upload and provide access to research data sets on Zenodo will be made on a case-by-case basis by the Project Coordinator (ETRA), the Technical Coordinator (IRI UL), and the partner(s) who own the data. Data sets marked as public will be made openly available, while those containing confidential or protected information will be kept private for privacy reasons.

Zenodo provides a user-friendly online service that allows researchers, scientists, EU projects, and institutions to share, preserve, and showcase research results, including data and publications, that are not already part of institutional or subject-based repositories. The service provides hosting in CERN's professional data centres, following industry best practices. Zenodo's policies on data handling and service usage are described in detail at [8].

As previously stated, ECOLOOP intends to share datasets publicly in Zenodo, using the repository's required/provided descriptive metadata. Zenodo provides a Digital Object Identifier (DOI) for all publicly accessible uploads, making them easily and uniquely citable. It is important to note that Zenodo DOIs cannot be edited once registered. Additionally, Zenodo supports the harvesting of all content via the OAI-PMH protocol [9].

3.2.2 ECOLOOP internal repository

During the life cycle of ECOLOOP, data collected or generated by the project will be stored and systematically organised in the official project repository on SharePoint managed by ETRA until the end of the project.

SharePoint is a cloud-based service, hosted by Microsoft to create sites to share documents and information with the partners. It is used as a repository to securely store and share files, making data available to the whole Consortium. The repository (documents section) consists of a project internal area, not possible to be accessed by external users and only share with the relevant partners of the different organization.

3.2.3 Open Access publications

The rules and principles of the European Commission's Horizon Europe Framework Programme clearly defines those scientific results generated within projects should be made available as open access publications, i.e., freely available online to any user. Following these rules, enforced in the ECOLOOP Grant Agreement –Annex 5, Article 17, open access will be ensured to all peer-reviewed scientific publications related to ECOLOOP and its composite solutions.

The beneficiaries must ensure open access to peer-reviewed scientific publications relating to their results. In particular, they must ensure that:

- at the latest at the time of publication, a machine-readable electronic copy of the published version or the final peer-reviewed manuscript accepted for publication, is deposited in a trusted repository for scientific publications.
- immediate open access is provided to the deposited publication via the repository, under the latest available version of the Creative Commons Attribution International Public Licence (CC BY) or a licence with equivalent rights; for monographs and other long-text formats, the licence may exclude commercial uses and derivative works (e.g. CC BY-NC, CC BY-ND) and
- information is given via the repository about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication.

Beneficiaries (or authors) must retain sufficient intellectual property rights to comply with the open access requirements.

Metadata of deposited publications must be open under a Creative Common Public Domain Dedication (CC 0) or equivalent, in line with the FAIR principles (in particular machine-actionable) and provide information at least about the following: publication (author(s), title, date of publication, publication venue); Horizon Europe or Euratom funding; grant project name, acronym and number; licensing terms; persistent identifiers for the publication, the authors involved in the action and, if possible, for their organisations and the grant. Where applicable, the metadata must

include persistent identifiers for any research output or any other tools and instruments needed to validate the conclusions of the publication.

Only publication fees in full open access venues for peer-reviewed scientific publications are eligible for reimbursement.

3.3 Making Data Interoperable

At a later stage of the project (during last phase of WP4), an evaluation of data interoperability will take place to determine which data and metadata vocabularies, standards, or methodologies will be utilized to promote interoperability. The assessment will determine if standardized vocabularies will be adopted for all data types within the dataset to enable cross-disciplinary interoperability. The first step in this process will be to define all types of research data that will be generated and handled during and after the project, as well as the components or actors involved in communication within the ECOLOOP project.

The following actions are planned for the upcoming years:

- Identification of the main interfaces between components and actors to be developed in the scope of THE ECOLOOP project.
- For each interface, assess the available standards and data models.
- For each interface, assess the available new data models based on ontologies.
- Gather the applicability of the standards and data models identified to the ECOLOOP project.
- For each interface, asses the most appropriate standards and best suitable data models.
- Include the aforementioned process in Deliverable D4.1.

The outcomes of the actions described above may be integrated in the potential coming versions of the DMP.

3.4 Increase Data Re-Use

Data handling during the project will be conducted on a case-by-case basis, as previously mentioned. Once a data set is designated as public, it will be made available on Zenodo for full reuse. This may include specifying an embargo period or providing controlled access to a whitelist of individuals, in accordance with Zenodo policies.

As suggested by the Model Grant Agreement data will be made accessible with Creative Commons Licences (CC BY or CC 0) [11] whenever possible. Depending on their characteristics, data sets may be subject to different licenses.

The Zenodo repository ensures sustainable archiving of the final research data. Items deposited in Zenodo will be retained for the lifetime of the repository, which is currently the lifetime of the host laboratory of CERN [12]. All publicly available uploads on Zenodo will be stored safely for the future in the same cloud infrastructure as research data from CERN's Large Hadron Collider and using CERN's battle-tested repository software INVENIO [13], which is used by some of the world's largest repositories such as INSPIRE HEP [14] and CERN Document Server.

The data will remain reusable at least until Zenodo discontinues the dataset(s).

The project envisages adopting the “data pedigree” concept, which ensures that each piece of relevant information is traceable back to the original data sources and author. This data lineage along with metadata allows for quality audit and sensitivity analyses of the outputs.

4 Other Research Outputs

4.1 ECOLOOP Website and Public Deliverables

The ECOLOOP website [15] describes the mission and the general approach of the project and its development status, as well as provides a short description of the project's objective and its methodology, news, events, promotional materials, publications and updates that are relevant to the project's activities. After submission and approval from the EC, the project's public deliverables will be downloadable from the website, while confidential deliverables will be kept in the SharePoint repository accessible only to authorised users. In certain cases, external parties may request access to confidential deliverables, and the Consortium may decide to share corresponding deliverables or specific parts with those parties. The public deliverables will be available in the commonly used PDF format, on a dedicated section of the project's website (under construction when preparing this deliverable).

During the life cycle of ECOLOOP, data collected or generated by the project will be stored and systematically organised in the official project repository on SharePoint.

Figure 1: Project website under construction, where public deliverables will be stored.

5 Allocation of Resources

5.1 Roles and Responsibilities

As indicated in previous sections, the Data Management Plan presented in this deliverable is just the first version, and the related Consortium discussions will be continuously carried out, to identify the relevant project outputs as well as to decide on the way and the means of their open access (if applicable). To ensure it, a dedicated time slot may be reserved at each project plenary meeting and, if needed, at selected Consortium audio conferences. The EC and the project reviewers will be informed about related work done and publications provided in the project management reports.

Individual responsibilities on data management in the project consortium are:

- Project Coordinator (ETRA) – to prepare and lead related discussions at the relevant project meetings and to maintain the project document repository SharePoint.
- Technical Coordinator (IRI UL) – to identify data collected by the project and technical project outcomes eventually suitable for publication; moreover, to ensure dataset integrity and compatibility for its use during the project lifetime by different partners.
- Dissemination Manager (ETRA) – to identify publications suitable for publication in the considered repositories and maintain ECOLOOP inputs for the Open Access.
- Each individual partner – to identify own project results suitable for publication and to share the published scientific articles in advance with project coordinator and dissemination manager.

The Project Coordinator and the Dissemination Manager have a particular responsibility to ensure that data shared through the ECOLOOP website are easily available, but also that backups are performed, and that proprietary data are secured.

Moreover, each ECOLOOP partner must respect the rules set out in this DMP. Datasets must be created, managed and stored appropriately and in line with applicable legislation. Validation and registration of datasets and metadata is the responsibility of the partner that generates the data in the respective Work Package (WP). Metadata constitute an underlying definition or description

of the datasets and facilitate finding and working with particular instances of data. Additional responsibilities undertaken by the ECOLOOP project partners include:

- Backing up data assets for sharing through Open Access repositories. It is the responsibility of the partner possessing these data assets.
- Quality control of the data assets. It is the responsibility of the demo partner providing the data.
- Managing different versions in case the data assets are updated and making sure that the latest version is available in the case of publicly available data.
- Consulting the concerned partner(s) before publishing data in the open domain that can be associated with an exploitable result. It is the responsibility of all project partners involved in this activity.

6 Data Security

The Zenodo and SharePoint repositories will ensure secure and safe storage of both public and non-public data respectively.

Zenodo provides clear security guaranties. All data files are stored in CERN Data Centres, primarily Geneva, with replicas in Budapest. Data files and metadata are backed up on a nightly basis. Files are regularly checked against their checksums (using MD5 algorithm) to assure that file content remains constant. In case of closure of the repository, Zenodo ensures that efforts will be made to integrate all content into suitable alternatives.

SharePoint is a web-based collaborative platform that integrates natively with Microsoft 365.Online, which is a cloud-based service managed by the project coordinator ETRA.

The servers hosting the research data will be accessible only by authorized system administrators. Files containing confidential data should be protected by owners using local encryption tools (i.e., password-protected archives) before being uploaded to shared repositories. Interaction through web user interfaces will use https protocol (i.e., secure). Also, a secure file transfer protocol (sftp) will be provided as the need arises.

To assure data security and privacy, the ECOLOOP developments will support advanced data anonymization and encryption mechanisms, as well as cloud and on-premises storage on servers to which only the relevant staff have access. Example of encryption mechanisms to ensure data security and privacy that may be used by the consortium are: Pseudonymization, Aggregation, Removal of sensitive data from datasets, AES (Advanced Encryption Standard), RSA (Rivest-Shamir-Adleman) or SSL/TLS (Secure Sockets Layer/Transport Layer Security).

More specifically the servers onto which the data will be stored will have server-side encryption. This means that the server's administration personnel will be able to generate public keys for specific personnel who will have access to the data but will not be able to access the data themselves (since the private keys required for this access will be generated on the machine of the person with access to the data). This means that only the required personnel (and stakeholders that have active data contracts) will have access to the data and, even in the remote case of a possible data leak or server hack, the data stolen will be fully encrypted.

Finally, and after a retention period (to be defined), a secure deletion software will be used to destroy data, i.e., using Gutman algorithm (35-pass overwrite technique).

If deemed necessary, a full format can be used in conjunction with overwriting, to provide further assurance that data cannot be recovered, guaranteeing the destruction of the project personal data.

The following guidelines will be used to ensure the security of the data:

- Use anonymised and aggregated data instead of individual data.
- Encrypt data by the local researchers and not allowing the data to leave their premises unencrypted.
- Store data in at least two separate locations to avoid loss of data.
- Limit the use of USB flash drives.
- Label files in a systematically structured way to ensure the coherence of the final dataset.

7 Ethics

Ethical issues are covered in WP1 and pre-assessed during the Grant Agreement Preparation phase. The ECOLOOP consortium must comply with all European, national and institutional legislation and directives relevant to the country where the data collection is taking place. The collection, processing and transmission of personal data will be analysed under principles of (a) The Universal Declaration of Human Rights and the Convention 108 for the Protection of Individuals with Regard to Automatic Processing of Personal Data, (b) The General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679), and (c) The national laws applying its provisions. Any additional regulations at national level that do not fall under the GDPR and apply to data protection, or any other sensitive information will also be considered.

Data managed during the project will be processed only under the following preconditions which need to be met: (a) When the data subject has given her/his consent; (b) When the processing is necessary for the performance of or the entering into a contract; (c) When processing is necessary for compliance with a legal obligation; and (d) When processing is necessary in order to protect the vital interests of the data subject.

8 Conclusions

This document sets the guidelines and recommendations to be followed to make the project research data Findable, Accessible, Interoperable and Reusable (FAIR) and therefore contribute to knowledge discovery and innovation.

The main elements of the data management policy that is used and will be used by the ECOLOOP project are analysed and studied in this deliverable.

As it has been stated in the document, the Data Management Plan is a living document that may be updated on a regular basis all along the project implementation, to cover all relevant changes or progresses that might occur during the project lifetime.

9 References and acronyms

9.1 References

[1] "Horizon Europe, Data Management Plan Template, Versio 1.0," 05 May 2021. [Online]. Available: https://enspire.science/wp-content/uploads/2021/09/Horizon-Europe-Data-Management-Plan-Template.pdf.

[2] [Online]. Available: https://www.go-fair.org/fair-principles/.

[3] [Online]. Available: https://opentunityproject.eu/.

[4] [Online]. Available: https://xflexproject.eu/ .

[5] [Online]. Available: https://www.compile-project.eu/.

[6] [Online]. Available: https://joinup.ec.europa.eu/collection/semic-support-centre/solution/dcat-application-profile-data-portals-europe.

[7] [Online]. Available: https://zenodo.org/.

[8] [Online]. Available: https://zenodo.org/policies.

[9] [Online]. Available: https://www.openarchives.org/pmh/.

[10] “Fact sheet open access to publications and data in Horizon 2020 - Fact sheet,” [Online]. Available: https://www.iprhelpdesk.eu/sites/default/files/newsdocuments/Open_Access_in_H2020.pdf.

[11] [Online]. Available: https://creativecommons.org/share-your-work/cclicenses/.

[12] [Online]. Available: https://www.home.cern/.

[13] [Online]. Available: https://inveniosoftware.org/.

[14] [Online]. Available: https://inspirehep.net/.

[15] [Online]. Available: https://ecoloop-project.eu/.

9.2 Acronyms

Table 3: Acronyms

Acronym	Description
DCAT	Data Catalogue Vocabulary
DCMI	Dublin Core Metadata Initiative
DMP	Data Management Plan
DoA	Description of Action
DOI	Digital Object Identifier
EC	European Commission
FAIR	Findable, Accessible, Interoperable, Reusable
GA	Grant Agreement
GDPR	General Data Protection Regulation
IP	Intellectual Property
IPR	Intellectual Property Rights
IoT	Internet of Things
OAI-PMH	Open Archives Initiative Protocol for Metadata Harvesting

Thank you

If you have any questions, please get in touch with us.

Contact Us

info@ecoloop-project.eu
www.ecoloop-project.eu

@EcoloopEU
company@ecoloopeu
@ecoloopEU