



## Deliverable 1.1 Data Management Plan

**Acronym:**  
NEO-CYCLE

**Project Title:**  
UPCYCLING OF NdFeB MAGNETS IN THE EU FOR GREEN  
APPLICATIONS

**Grant Agreement No:**  
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**Project funded by**



<b>Deliverable</b>	<b>Data Management Plan</b>
<b>Associated WP</b>	<b>WP1</b>
<b>Associated Task(s)</b>	<b>Task 1.3</b>
<b>Due Date</b>	<b>28/02/2025</b>
<b>Date Delivered</b>	
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## Abbreviations

Abbreviation	Definition
DMP	Data Management Plan
EC	European Commission
FAIR	Findable, Accessible, Interoperable, Reusable
GDPR	General Data Protection Regulation
NGOs	Non-governmental organization
SMEs	Small and medium-sized enterprises
TRL	Technology readiness level
WEEE	Waste from Electrical and Electronic Equipment
WP	Work package



### Project funded by



## 1. Data summary

### 1.1. Project summary

This report is the first version and provides an overview of the project's data management, including general details and descriptions of the data management practices per **work packages that are already ongoing**. We will **update the report** in the upcoming period to reflect the latest deliverables and milestones achieved.

The NEO-CYCLE project aims to demonstrate at TRL6 the sustainable upcycling of spent NdFeB magnets coming from hard disk drives (HDDs), reaching high-quality end products for 4 case studies: pharmaceutical, ammonia, fertilizers, and polymers industries; and will include necessary paths to reach the market uptake. To reach this aim, NEO-CYCLE involves all the relevant actors in the value chain, from public authorities to WEEE recycler companies, technology developers, associations, NGOs, SMEs, and commercial companies in the targeted sectors.

The participants of the projects are the following:

1. IDENER RESEARCH & DEVELOPMENT  
AGRUPACION DE INTERES ECONOMICO
2. TECHNISCHE UNIVERSITAET BERGAKADEMIE FREIBERG
3. FRAUNHOFER GESELLSCHAFT ZURFORDERUNG DER ANGEWANDTEN FORSCHUNG EV
4. UNIVERSITAT POLITECNICA DE CATALUNYA
5. UNIVERSITÀ DI TORINO
6. FLAMMA S.P.A.
7. POLITECHNIKA WARSZAWSKA
8. RMF TECH GMBH
9. VYTAUTO DIDZIOJO UNIVERSITETAS
10. L'UREDERRA, FUNDACION PARA EL DESARROLLO TECNOLOGICO Y SOCIAL
11. LC INNOCONSULT INTERNATIONAL
12. NON-GOVERNMENTAL ORGANIZATION AGENCY OF EUROPEAN INNOVATIONS
13. FRAUNHOFER AUSTRIA RESEARCH GMBH
14. ASOCIATIA DE STANDARDIZARE DIN ROMANIA
15. CONFEDERAZIONE GENERALE DELL AGRICOLTURA ITALIANA
16. HOLOSS - HOLISTIC AND ONTOLOGICALSOLUTIONS FOR SUSTAINABILITY, LDA.
17. ECORESET SA
18. STENA RECYCLING SRL
19. UNIVERSITA DEGLI STUDI DI PAVIA
20. IBERIAN SUSTAINABLE MINING CLUSTER
21. ECOCASTULUM SL
22. CASALE SA
23. REGIONE LOMBARDIA



The Data Management Plan (DMP) for the NEO-CYCLE project is developed to facilitate data flow and utilization of the data between the parties, including third parties/public where appropriate, and ensure proper data preservation for future use. DMP was developed per the Guidelines on FAIR (Findable, Accessible, Interoperable, Reusable) Data Management for Horizon Europe projects. The purpose of the DMP is to cover the complete research data life cycle and describe the types of data generated/collected during the project. These standards are used, how data are preserved, and what parts will be shared for verification or use. The Data Management Plan-DMP will ensure all data is collected, stored, and used in compliance with GDPR (General Data Protection Regulation). Besides, the DMP will detail how the project members will carry out the planned data collection and data processing operations. In this sense, all beneficiaries confirm GDPR compliance, including relevant systems and privacy practices, and deploy privacy by design and privacy by default. With all these tools, the involved partners in collecting the data will supervise and monitor that the rights, freedom, and ownership of the data of all the individuals who participate directly or indirectly in the project are ensured.

The details of the Data Management Plan are demonstrated in the Grant Agreement, Task 1.3, 2.3 and 3.3 Data and Risk Management: Data generated through the project lifetime will be analysed and a comprehensive DMP will be delivered at M6, identifying best practices and specific standards to be applied to the R&D data collected in relevant WPs, considering the actual EU guidelines pertaining to the format, storage & curation. These practices will ensure the data suitability for sharing and reuse in accordance with existing legislation and guidelines from public authorities. A data repository will be available at M8, conforming to applicable laws and ethical guidelines. DMP will detail the format of the quantitative scientific data, results of statistical analyses, and anonymized data that will be included in the repository. The Data Management Plan will be submitted to the EC by M6, and updated internally at M19, M34, M48.

## 1.2. Management of research data and other research outputs

It is crucial to develop a data management strategy, as NEO-CYCLE is a data-intensive initiative, relying on generation, sharing and analysis of large amounts of data. Thus, data management is a key aspect of the methodology, which will follow the FAIR (Data Principles. Task 1.3 will develop a DMP, delivering the 1st version by M6 (D1.1) and updating it over the course of the project. DMP will describe the steps to ensure FAIR principles over the data life cycle. The consortium has identified the main types of data that will be produced and re-used (Table 1). The form of the data will usually determine the format.



Table 1. Main types of data that will be handled within the **NEO-CYCLE** project

<b>Observational</b>	Captured in real-time, typically outside the laboratory, e.g., sensor readings, plants operation, survey results, images, etc., e.g., generated in <b>WP5</b> , <b>WP7</b> , <b>WP8</b> (Upscaling and validation approaches)
<b>Experimental</b>	Collected under controlled conditions, e.g., finetuning experiments in <b>WP4</b> and <b>WP7</b>
<b>Simulation</b>	Generated by the models produced within the project. These data will be reproducible if the model and inputs are preserved. Simulation data will be mainly generated in <b>WP7</b> (processes digitalisation)
<b>Derived</b>	Generated by existing datasets and reproducible. Derived data from experimental datasets may be used, e.g., as inputs for modelling in <b>WP7</b> , as inputs for sustainability assessments in <b>WP9-10</b>
<b>Reference or canonical</b>	Static or organic collection (peer-reviewed) datasets most probably published and/or curated, that will be used with experimental data e.g., as input for the modelling activities ( <b>WP7</b> ) and LCA ( <b>WP9-10</b> )

### 1.3. Open Science Practices

NEO-CYCLE consortium will integrate an open science approach to the scientific process based on transparent cooperative work, tools, and knowledge diffusion. Achieving the project objectives relies on solid collaboration, including sharing of data, knowledge, and materials. The open science approach will start within the consortium to increase the quality, efficiency, and accuracy of results. The partners commit to using common data standards, open software as much as possible and open protocols. The open approach outside the consortium will make our results more reliable, impactful, and better understandable by society. The NEO-CYCLE project meets the requirements of the open science practices, which are involved in the Grant Agreement. The details are provided in **Annex 1**.

#### **Key Elements of the Open Science Approach**

##### **Open Access to Scientific Publications**

The consortium ensures immediate open access to all peer-reviewed scientific publications resulting from the project, with availability at the time of publication or earlier. Publications are deposited in repositories like Zenodo (OpenAIRE-compliant) and institutional archives such as the Cork Open Research Archive (UCC), Pangaea (AWI), or Med Iter Haifa (UH). Zenodo deposits are automatically indexed in OpenAIRE to maximize impact. Each partner also provides access to research outputs, tools, or instruments necessary to validate publication findings. Publications include comprehensive metadata, citing European Union and Horizon Europe funding, the project's acronym and grant number, the publication date, and persistent identifiers like DOIs. Publishing in Open Research Europe is prioritized.



## Open Access to Research Data

The consortium adheres to the principle of “*as open as possible, as closed as necessary*” for research data and outputs, including software, models, algorithms, and workflows. All essential data for validating peer-reviewed publications will be accessible via Zenodo, ensuring readers can verify, reproduce, and build upon the research findings. Publications reference the availability of data (e.g., DOI identifiers). Data access conditions, including exceptions for legitimate reasons such as data protection, intellectual property, or security concerns, are detailed in the project’s Data Management Plan (*Deliverable 9.1*) and updated version (*D9.3*). The European Open Science Cloud will also be utilized when feasible.

## Responsible Research Data Management

The consortium follows the *FAIR principles*—Findable, Accessible, Interoperable, and Reusable—to ensure responsible data management. This approach promotes collaboration among partners, enabling the delivery of high-quality outputs with traceable, reproducible, and reusable data, even beyond the project’s lifespan.

Concrete measures to ensure reproducibility include:

- **Standardized data collection protocols:** Partners use agreed-upon procedures for data collection and documentation to ensure consistency across the project.
- **Version-controlled repositories:** Software, scripts, and data files are stored in platforms like GitHub and Zenodo with versioning to ensure all iterations are documented.
- **Clear documentation:** Detailed methodological descriptions, including sample preparation, data analysis workflows, and computational pipelines, are published and made accessible.
- **Open software and tools:** Custom open-source software and analysis scripts, installation guides, and usage instructions are available.
- **Regular reproducibility checks:** The consortium independently replicates key analyses to verify results and address potential discrepancies.
- **Metadata standards:** Data include detailed metadata (e.g., variables, units, methods) for proper interpretation and reuse.
- **Inter-laboratory comparisons:** When feasible, multiple consortium members replicate experimental procedures to confirm consistency across sites.

## Other Open Science Practices

The consortium actively supports additional open science practices, including:

- **Citizen science initiatives** to engage the public.
- **Open peer-review processes** to ensure transparency.
- **Sharing preprints** on platforms like arXiv and bioRxiv.



- **Publishing protocols, workflows, and analytic scripts** on repositories like GitHub.

These practices enhance visibility, reproducibility, and the overall impact of research outputs. The consortium has a strong track record in these areas and integrates them into a broader Responsible Research and Innovation (RRI) framework.

## Responsible Research and Innovation (RRI) Framework

The RRI framework fosters:

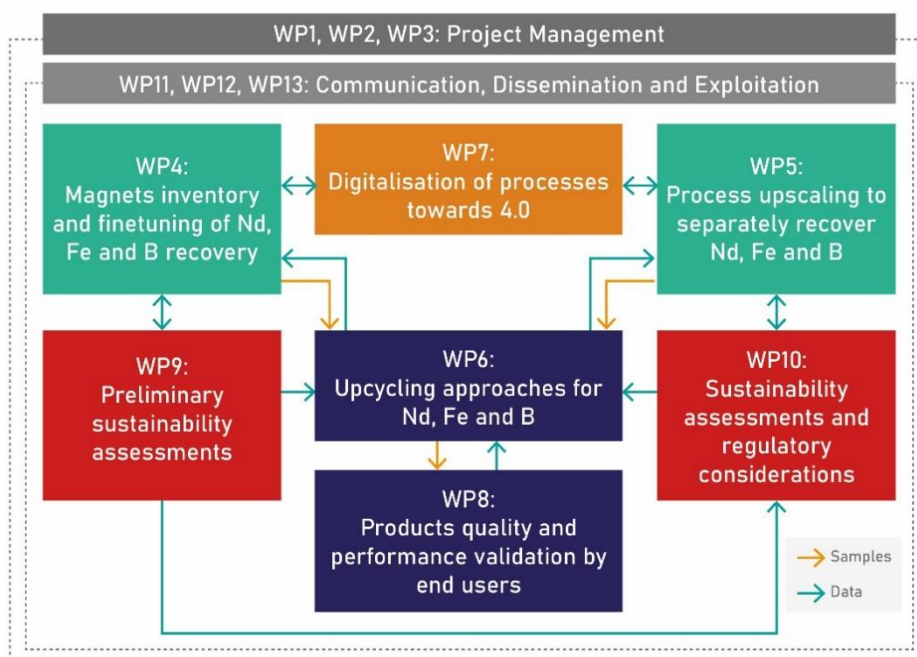
- **Stakeholder engagement** through communication and dissemination activities.
- **Gender equality** promoting balanced representation in R&D teams and decision-making.
- **Science education** via participatory research and training for students and early-career researchers.
- **Ethics and integrity** through ongoing reflection and deliberation on the consortium's actions and values.

The NEO-CYCLE consortium aims to amplify research impact, excellence, and societal relevance by embedding open science practices and principles.

### 1.4. Data flow between partners

All partners are responsible for making project-relevant data available to other project partners in a timely fashion. This will enable progress in the project, which relies on input from other partners.

Figure 1. Work Packages connection



## 1.5. Data Description

The list of WPs is presented in Table 2 and Data management is included in all of the WPs.

*Table 2. List of WP's leaders*

WP	Lead beneficiary
WP1, WP2, WP3	IDE
WP4	TUF
WP5	IKTS
WP6	UNIPV
WP7	IDE
WP8	UNIPV
WP9, WP10	HOLOSS
WP11, WP12, WP13	LCI

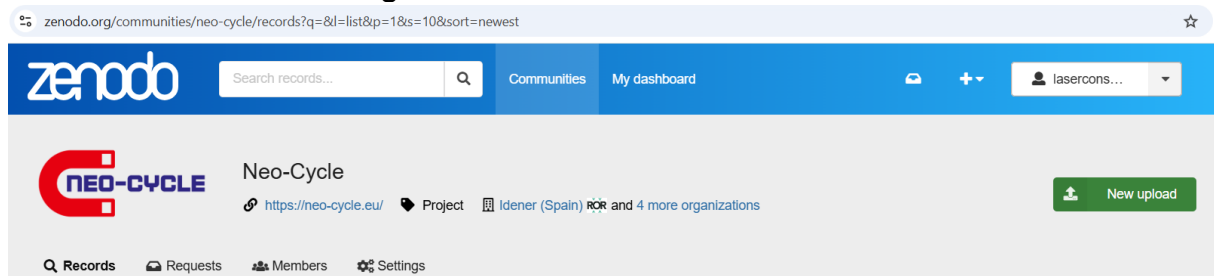


## 2. Fair data

To facilitate the management according to FAIR principles, the consortium will use the Communities functionality of Zenodo (free-of-charge, funded by the EC and managed by CERN) to deposit publications, data, and other outputs in a common project repository. LCI will manage **NEO-CYCLE data repository (launched by M8)** and overseeing that the uploaded data complies with the principles defined in the DMP, while each partner will appoint one data management responsible within their organisation. The Zenodo repository set out in Task 1.3 will be continuously updated during the second and third reporting period. More details are provided in **Annex 2**.

**Zenodo** is an open-access digital repository designed to enable researchers to share and preserve a wide range of research outputs. It was developed by CERN under the European OpenAIRE program and is widely used by the global research community. Zenodo allows users to upload publications, datasets, software, presentations, and other research materials, making them publicly available and citable with a **Digital Object Identifier (DOI)**. This platform supports open science by providing free access to research findings and promoting transparency and collaboration across disciplines.

Figure 2. NEO-CYCLE on Zenodo



### 2.1. Current uploads on Zenodo

October 31, 2024 | v1

Image

Open

[NEO-CYCLE Logo](#)

LC Innoconsult

Part of [NEO-CYCLE](#)

October 31, 2024 | v1



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Schweizerische Eidgenossenschaft  
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Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
State Secretariat for Education,  
Research and Innovation SERI

Presentation

Open

[NEO-CYCLE Kick-off Meeting presentation](#)

LC Innoconsult

Part of [NEO-CYCLE](#)

January 15, 2025 | v1

Other

Open

[D11.1 Webpage, social media channels](#)

LC Innoconsult

Part of [NEO-CYCLE](#)

January 16, 2025 | v1

Project deliverable

Open

[D11.5 Skill Strategies Planning](#)

Non-governmental organisation agency of European Innovations

Part of [NEO-CYCLE](#)



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Swiss Confederation

Federal Department of Economic Affairs,  
Education and Research EAER  
**State Secretariat for Education,  
Research and Innovation SERI**

### 3. Data processing by the beneficiaries

The beneficiaries must process personal data under the Agreement in compliance with the applicable EU, international and national law on data protection (in particular, Regulation 2016/67914).

**They must ensure that personal data is:**

- processed lawfully, fairly and in a transparent manner in relation to the data subjects
- collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed
- accurate and, where necessary, kept up to date
- kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data is processed and
- processed in a manner that ensures appropriate security of the data.

The beneficiaries may grant their personnel access to personal data only if it is strictly necessary for implementing, managing and monitoring the Agreement. The beneficiaries must ensure that the personnel are under a confidentiality obligation.

The beneficiaries must inform the persons whose data are transferred to the granting authority and provide them with the Portal Privacy Statement.

*To highlight the NEO-CYCLE project's GDPR compliance, the communication and dissemination partner collects explicit consent from individuals before including them in photos, ensuring transparency and respect for privacy rights.*



## 4. Allocation of resources

All partners, especially the task leaders, are requested to collect and manage the data according to the DMP and other common professional practices. The *WP leaders are responsible for implementing the DMP and monitoring data management activities.*

## 5. Data flow between partners

All partners are responsible for making project-relevant data available to other project partners in a timely fashion. This will enable progress in the project, which relies on input from other partners.

Ensuring **precise data flow** between partners, NEO-CYCLE adopted a structured workflow, clear communication, and robust data management protocols. Following the systematic approach described below, we achieve **seamless, precise, and secure data exchange**, minimizing inconsistencies and maximizing research impact.

### 1. Define a Data Governance Framework

- Establish roles and responsibilities (e.g., data stewards, custodians, administrators).
- Develop data-sharing agreements (DSAs) covering ownership, access rights, and usage policies.
- Align with FAIR (Findable, Accessible, Interoperable, Reusable) principles to maximize data usability.

### 2. Standardise Data Formats & Protocols

- Use common file formats (e.g., CSV, JSON, NetCDF, HDF5) for interoperability.
- Define naming conventions for datasets, files, and variables.
- Ensure metadata standards (e.g., Dublin Core, DataCite, ISO 19115 for geospatial data).

### 3. Implement a Centralized Data Exchange System

- Use a shared cloud-based repository (e.g., Microsoft Teams, Google Drive, OneDrive, SharePoint, Zenodo).
- Employ secure data repositories (e.g., Dataverse, Open Science Framework).
- For large-scale data, use high-performance computing (HPC) clusters or data lakes.

### 4. Automate Data Transfer & Version Control

- Utilize APIs or ETL pipelines (Extract, Transform, Load) for real-time data exchange.
- Implement Git/GitHub, GitLab, or DVC (Data Version Control) for tracking changes in datasets.
- Schedule automated backups to prevent data loss.

### 5. Ensure Data Security & Compliance

- Apply encryption protocols (e.g., TLS, SSL) for data transmission.
- Define access control levels (e.g., read-only, edit, admin).



- Ensure compliance with GDPR, HIPAA, or other relevant regulations.

## **6. Enable Real-time Collaboration & Communication**

- Use project management tools like Trello, Asana, or Notion to track data-related tasks.
- Set up Slack, Microsoft Teams, or Mattermost for instant communication.
- Hold regular data review meetings to discuss challenges and updates.

## **7. Implement Data Quality Control Measures**

- Establish automated validation checks to detect anomalies.
- Use data cleaning tools (e.g., OpenRefine, Pandas for Python, R scripts).
- Conduct peer review of datasets before publication.

## **8. Facilitate Open Access & Long-term Storage**

- Deposit final datasets in public repositories (e.g., Zenodo).
- Assign DOIs (Digital Object Identifiers) for datasets for citation.
- Ensure long-term data preservation through archival storage (e.g., LOCKSS, CLOCKSS).



## 6. Data management in Work package WP1 – Project Management I

The aim of the WP1 is to guarantee that the project is carried out correctly in accordance with the objectives set, avoiding and resolving possible risks and problems that may arise, and being in continuous contact with the consortium and the EC.

### 6.1. Task 1.1. Overall coordination (Lead partner: IDE)

Participating partners: ALL

Partner: IDE Task 1.1 Overall coordination
What is the purpose of the data collection/generation and its relation to the project's objectives?
The purpose of data collection and generation in the NEO-CYCLE project is to ensure that the project's objectives are met efficiently and effectively. Regular progress reports to the European Commission (EC) help monitor the project's advancement and maintain accountability. Maintaining the consortium agreement ensures all partners are aligned and cooperative, while consolidating contracts and handling amendments ensures compliance with legal requirements. These administrative tasks are crucial for coordinating the efforts of multiple partners and adapting to any changes, thereby facilitating the successful completion of the project's goals.
What types and formats of data will the project/task generate/collect?
The project/task will generate and collect data such as textual progress reports in word processing or PDF formats, detailing the project's advancement against its objectives. It will also involve maintaining legal documents, including updates to the consortium agreement, which may be in text files or scanned signed agreements. Additionally, formal contracts and amendments will be collected, likely in word processing, PDF, or scanned image formats, to outline the terms of collaboration and document any changes.
Where will it be stored?
The data generated and collected by the project/task will be stored in a secure, centralized database or document management system, accessible only to authorized personnel involved in the NEO-CYCLE project. This could involve cloud storage solutions for easy access and collaboration or on secure servers maintained by LCI/IDENER to ensure data integrity and confidentiality.
Will you re-use any existing data and how?
The project may re-use existing data if relevant and available, potentially to benchmark progress, inform project direction, or validate outcomes. This could include data from previous reports, studies, or projects. The re-use of existing data will depend on its alignment with current project objectives and its accessibility, quality, and relevance.



What is the expected size of the data?
The expected size of the data for the project/task will vary based on the types and formats of data collected. Progress reports and contractual documents are mainly text-based and are not expected to be very large, typically ranging from a few KB to a few MB each. Over the duration of the project, the cumulative size of these documents could reach several GB, especially when considering multiple reporting periods and potential attachments or supplementary materials.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?
The data will be shared primarily with the European Commission (EC) as part of the project's reporting requirements and with consortium partners to facilitate project coordination and management. The sharing of data will occur under conditions outlined in the consortium agreement and in compliance with relevant data protection regulations. On the other hand, data might be useful to project stakeholders, including consortium partners, future researchers, policymakers, and potentially the public, if the findings contribute to public knowledge or inform policy decisions. Data utility extends to informing project progress, enabling decision-making, and contributing to the field's body of knowledge.
Will you generate any research data that could be shared publicly (part of open science)?
Any research data that could be shared publicly in the spirit of open science will likely depend on the type of project and the nature of the information collected. If the NEO-CYCLE project generates not sensitive or confidential data, such as aggregated findings or conclusions that do not compromise intellectual property or personal data, this information could potentially be shared publicly. The decision to share data publicly would also take into consideration the consortium agreement, EC requirements, and data protection laws.

## 6.2. Task 1.2. Financial and administrative management (Lead partner: IDE)

Participating partners: ALL

<b>Partner: IDE</b> <b>Task 1.2 Financial and Administrative Management</b>
What is the purpose of the data collection/generation and its relation to the project's objectives?
The data collection and generation for this task serve to support the financial and administrative management necessary for the project's success. This includes day-to-day management documentation, preparation of financial reports, coordination of meetings, and ensuring compliance with legal and contractual obligations. It also involves supporting partners in fulfilling reporting requirements, securing financial audits, and managing any ethical issues. All these activities are crucial for maintaining transparency, accountability, and risk management, directly contributing to the project's objectives of effective oversight and governance.



What types and formats of data will the project/task generate/collect?
The project will generate and collect administrative data in text formats, financial reports in spreadsheets, contractual documents as PDFs, risk registers in databases, and ethical documentation in secure files, all vital for project management and compliance.
Where will it be stored?
The data generated and collected for Task 1.2 will be stored in a secure, centralized system, likely a combination of cloud storage services for accessibility and on-premises servers for sensitive information, ensuring data integrity and compliance with data protection regulations.
Will you re-use any existing data and how?
Existing data may be reused for benchmarking and comparison, including historical financial documents, past reports, and administrative records, to enhance efficiency and inform current project management practices.
What is the expected size of the data?
For Task 1.2, the expected size of data will likely be moderate, encompassing text documents, spreadsheets, and PDFs, and is anticipated to accumulate to several GB over the project's lifespan.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?
Data will be shared with project partners and the European Commission under strict adherence to data protection laws and the consortium agreement. Its utility extends to partners for project management and to external auditors or regulatory bodies for compliance verification.
Will you generate any research data that could be shared publicly (part of open science)?
Data from Task 1.2, primarily concerned with financial and administrative management, is unlikely to be shared publicly due to its sensitive nature, unless it is aggregated and anonymized for the purpose of contributing to best practices in project management as part of open science.



## 7. Data management in Work package WP4 – Magnets inventory and finetuning of Nd, Fe and B recovery

In this WP in the first phase, the project initiates with a comprehensive waste inventory and detailed magnet characterization to assess the composition and condition of end-of-life (EoL) permanent magnets. Following this, they focus on optimizing processes at a laboratory scale to achieve efficient recovery of over 95% of Neodymium (Nd), Iron (Fe), and Boron (B) from these EoL magnets, leveraging Solid-State Conversion (SSC) and electrochemical extraction methods. Subsequent steps involve the selective separation of Nd, Fe, and B to achieve targeted purity levels, aligning with the high-quality standards required for end products. Finally, a rigorous impurities evaluation is conducted to establish contamination thresholds for these materials, ensuring suitability for the new applications envisioned in industries such as pharmaceuticals, ammonia synthesis, fertilizers, and polymers. This sequential approach aims to maximize recovery, enhance material purity, and set precise standards for future uses.

### 7.1. Task 4.1. Waste inventory and magnets characterisation (Lead Partner: ECORESET)

Participating: STENA, TUF, IDE.

Partner: ECORESET SA	
Task 4.1. Waste inventory and magnets characterisation	
What is the purpose of the data collection/generation and its relation to the project's objectives?	ECORESET sources and separates Nd and B containing magnets from hard disks originated from laptops, desktops and servers. The magnets are weighed on scales owned by the company. Elemental analysis on the different types of magnets will be conducted.
What types and formats of data will the project/task generate/collect?	Weight of magnets / type of device / Work Package 4.1 Elemental analyses of magnets / type of device / Work Package 4.1
Where will it be stored?	In Excel format uploaded to the online folder of NEO-CYCLE.
Will you re-use any existing data and how?	Not known yet.
What is the expected size of the data?	Small size, <1 MB (prediction).
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	The data will be shared only internally among the project partners by email, by the online shared point and during project meetings. The data are useful to all the project partners that are involved in the upscaling the metal extraction and separation processes.



Will you generate any research data that could be shared publicly (part of open science)?

Probably not.

**Partner: STENA RECYCLING S.R.L.**

**Task 4.1. Waste inventory and magnets characterisation**

What is the purpose of the data collection/generation and its relation to the project's objectives?

Register activities (separation) and collection.

What types and formats of data will the project/task generate/collect?

Excel

Where will it be stored?

Server in Sweden (Parent Company).

Will you re-use any existing data and how?

No

What is the expected size of the data?

Less than 1 GB.

Whom will the data be shared? Under what conditions?  
To whom might the data be useful ('data utility')?

The data will be stored in the company server in Sweden.

Will you generate any research data that could be shared publicly (part of open science)?

No

## 7.2. Task 4.2 Nd extraction via solid-state chlorination (SSC) approach (Lead: TUF)

Participating: TUF

**Partner: TUF**

**Task 4.2 Nd extraction via solid-state chlorination (SSC) approach**

What is the purpose of the data collection/generation and its relation to the project's objectives?

- Analysis of different input material streams from NdFeB-magnets from collected waste
- Digestion of the material and ICP-OES analysis
- XR-fluorescent analysis for main components of magnets
- Solid state chlorination (SSC) and analysis of product (chlorinated Nd and Fe) – calculation of yield
- Data collection of the SSC process (e.g. temperature curve) for further scaling experiments

What types and formats of data will the project/task generate/collect?



<ul style="list-style-type: none"> <li>- The data format of ICP-OES-raw data is an specific format but the data are transformed into readable .xlsx -files (MS-Excel).</li> <li>- Temperature data in °C</li> <li>- Weight/mass in mg, g or mg/g, %</li> <li>- Solutions: mg/L</li> <li>- Reports will be written in MS Word format (docx) and for sharing with partners transformed into pdf format.</li> </ul>
<b>Where will it be stored?</b>
<ul style="list-style-type: none"> <li>- The data are stored on a network drive with personnel-limited access</li> </ul>
<b>Will you re-use any existing data and how?</b>
<ul style="list-style-type: none"> <li>- We have collected experimental experiences over the last years for the SSC process which are worthwhile for the project.</li> <li>- We developed a digestion method to analyze NdFeB-magnet components by ICP-OES.</li> </ul>
<b>What is the expected size of the data?</b>
<ul style="list-style-type: none"> <li>- Excel and word-files normally consume some MB of storage capacity.</li> <li>- Literature will be stored as pdf files.</li> </ul>
<b>Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?</b>
<ul style="list-style-type: none"> <li>- Prof. M. Bertau, scientific researchers, PhD-student</li> <li>- Access rights are permitted by Prof. Bertau to staff members of the institute</li> <li>- Data are useful for the working groups in the same work package and the following work packages</li> </ul>
<b>Will you generate any research data that could be shared publicly (part of open science)?</b>
<ul style="list-style-type: none"> <li>- Once the data are ready for publication, we are planning to write a publication as open source as provided by the EU</li> </ul>

### 7.3. Task 4.3 Electrochemical Nd extraction (Lead: TUF)

Participating: RMF

<b>Partner: TUF</b> <b>Task 4.3 Electrochemical Nd extraction</b>
<b>What is the purpose of the data collection/generation and its relation to the project's objectives?</b>
<ul style="list-style-type: none"> <li>- Analysis of different input material streams from NdFeB-magnets from collected waste</li> <li>- Digestion of the material and ICP-OES analysis</li> <li>- XR-fluorescent analysis for main components of magnets</li> <li>- Solid state chlorination (SSC) and analysis of product (chlorinated Nd and Fe) – calculation of yield</li> <li>- Data collection of the SSC process (e.g. temperature curve) for further scaling experiments</li> </ul>
<b>What types and formats of data will the project/task generate/collect?</b>
<ul style="list-style-type: none"> <li>- The data format of ICP-OES-raw data is an specific format but the data are transformed into readable xlsx.-files (MS Excel)</li> </ul>



<ul style="list-style-type: none"> <li>- Temperature data in °C</li> <li>- Weight/mass in mg, g or mg/g, %</li> <li>- Solutions: mg/L</li> <li>- Reports will be written in MS-word format (docx) and for sharing with partners transformed into pdf format</li> </ul>
<b>Where will it be stored?</b>
<ul style="list-style-type: none"> <li>- The data are stored on a network drive with personnel limited access.</li> </ul>
<b>Will you re-use any existing data and how?</b>
<ul style="list-style-type: none"> <li>- We have collected experimental experiences over the last years for the SSC process which are worthwhile for the project</li> <li>- We developed a digestion method to analyse NdFeB-magnet components by ICP-OES</li> </ul>
<b>What is the expected size of the data?</b>
<ul style="list-style-type: none"> <li>- Excel and word-files normally consume some MB of storage capacity</li> <li>- Literature will be stored as pdf files</li> </ul>
<b>Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?</b>
<ul style="list-style-type: none"> <li>- Prof. M. Bertau, scientific researchers, PhD-student</li> <li>- Access rights are permitted by Prof. Bertau to staff members of the institute</li> <li>- Data are useful for the working groups in the same work package and the following work packages</li> </ul>
<b>Will you generate any research data that could be shared publicly (part of open science)?</b>
<ul style="list-style-type: none"> <li>- Once the data are ready for publication, we are planning to write a publication as open source as provided by the EU</li> </ul>

<b>Partner: RMF Tech GmbH</b> <b>Task 4.3 Electrochemical Nd extraction</b>
<b>What is the purpose of the data collection/generation and its relation to the project's objectives?</b>
Generate data of process parameters to construct a technical plant to process the waste materials to new products.
<b>What types and formats of data will the project/task generate/collect?</b>
Word-files (.docx); Excel-files (.xlsx), pdf-files
<b>Where will it be stored?</b>
<ul style="list-style-type: none"> <li>- Cloud-Server</li> <li>- Hard disks</li> </ul>
<b>Will you re-use any existing data and how?</b>
No
<b>What is the expected size of the data?</b>
- Unknown at the present time
<b>Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?</b>
<ul style="list-style-type: none"> <li>- Project partners   conditions: If they announce the requirement, they will receive the data.</li> </ul> <p>The data from WP4 can be useful for the WP5 and the involved partners.</p>



Will you generate any research data that could be shared publicly (part of open science)?

- Unknown at the present time.

#### 7.4. Task 4.4. Metals extraction and selective separation (Lead Partner: IKTS)

Participating: TUF

<b>Partner: IKTS</b>	
<b>Task 4.4 Metals extraction and selective separation</b>	
What is the purpose of the data collection/generation and its relation to the project's objectives?	Study and evaluation of the individual separation of rare earth streams coming from solid-state chlorination process or electrochemical approach.
What types and formats of data will the project/task generate/collect?	Recovery rate graph including different parameters for individual separation such as temperature, complexing agent (concentration and volume), etc.  Form of the data: origin files, images (figures) Format of the data: .ppt, .xlsx, .doc
Where will it be stored?	Fraunhofer server
Will you re-use any existing data and how?	We considered re-using data but found that it does not meet our research requirements.
What is the expected size of the data?	100 MB of Excel data + metadata files, figures presenting data: ca. 1 GB
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	In principle, data will not be shared by default but will have to be considered on a case-by-case basis. The data might be useful for the scientific community, R&D engineers, and other stakeholders.
Will you generate any research data that could be shared publicly (part of open science)?	The data published in scientific papers/conferences will be shared publicly.



<b>Partner: TUF</b>	
<b>Task 4.4 Metals extraction and selective separation</b>	
<b>What is the purpose of the data collection/generation and its relation to the project's objectives?</b>	<ul style="list-style-type: none"> <li>- Analysis of different input material streams from NdFeB-magnets from collected waste</li> <li>- Digestion of the material and ICP-OES analysis</li> <li>- XR-fluorescent analysis for main components of magnets</li> <li>- Solid state chlorination (SSC) and analysis of product (chlorinated Nd and Fe) – calculation of yield</li> <li>- Data collection of the SSC process (e.g. temperature curve) for further scaling experiments</li> </ul>
<b>What types and formats of data will the project/task generate/collect?</b>	<ul style="list-style-type: none"> <li>- The data format of ICP-OES-raw data is an specific format but the data are transformed into readable xlsx.-files (MS-Excel)</li> <li>- Temperature data in °C</li> <li>- Weight/mass in mg, g or mg/g, %</li> <li>- Solutions: mg/L</li> <li>- Reports will be written in MS-word format (docx) and for sharing with partners transformed into pdf format</li> </ul>
<b>Where will it be stored?</b>	<ul style="list-style-type: none"> <li>- The data are stored on a network drive with personnel-limited access</li> </ul>
<b>Will you re-use any existing data and how?</b>	<ul style="list-style-type: none"> <li>- We have collected experimental experiences over the last years for the SSC process which are worthwhile for the project</li> <li>- We developed a digestion method to analyse NdFeB-magnet components by ICP-OES</li> </ul>
<b>What is the expected size of the data?</b>	<ul style="list-style-type: none"> <li>- Excel and word-files normally consume some MB of storage capacity</li> <li>- Literature will be stored as pdf files</li> </ul>
<b>Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?</b>	<ul style="list-style-type: none"> <li>- Prof. M. Bertau, scientific researchers, PhD-student</li> <li>- Access rights are permitted by Prof. Bertau to staff members of the institute.</li> <li>- Data are useful for the working groups in the same work package and the following work packages.</li> </ul>
<b>Will you generate any research data that could be shared publicly (part of open science)?</b>	<ul style="list-style-type: none"> <li>- Once the data are ready for publication, we are planning to write a publication as open source as provided by the EU</li> </ul>

## 7.5. Task 4.5. Refining metal recovery (Lead: IKTS)

Participating: IKTS

<b>Partner: IKTS</b> <b>Task 4.5 Refining metal recovery</b>	
What is the purpose of the data collection/generation and its relation to the project's objectives?	Evaluation of the suitability of the intermediate products for upcycling approaches
What types and formats of data will the project/task generate/collect?	Impurity content graph including different parameters for each different use case.  Form of the data: origin files, images (figures) Format of the data: .ppt, .xlsx, .doc
Where will it be stored?	Fraunhofer server
Will you re-use any existing data and how?	We considered re-using data but found that it does not meet our research requirements
What is the expected size of the data?	100 MB of excel data + metadata files, figures presenting data: ca. 750 MB
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	In principle, data will not be shared by default but will have to be considered on a case-by-case basis. The data might be useful for the scientific community, R&D engineers, and other stakeholders.
Will you generate any research data that could be shared publicly (part of open science)?	The data published in scientific papers/conferences will be shared publicly.



## 8. Data management in Work package WP9 – Preliminary sustainability assessments

This WP comprises early identification, collection, and comprehension of the need for assessing sustainability and circularity elements while taking into account the NEO-CYCLE innovations' environmental, economic, and social dimensions.

### 8.1. Task 9.1: Preliminary Life Cycle Assessment (LCA) and Life Cycle Cost (LCC). (Lead: HOLOSS)

Participating: HOLOSS, ALL.

Partner: HOLOSS	
Task 9.1 Preliminary Life Cycle Assessment and Life Cycle Cost	
What is the purpose of the data collection/generation and its relation to the project's objectives?	The data collected will be used to create to flowcharts of the processes and to fill in the Life Cycle Inventories needed to do the Life Cycle Sustainability Assessment.
What types and formats of data will the project/task generate/collect?	Emails, Surveys, Excel, PowerPoint, and Word documents, as well as reports, should be produced and saved inside the cloud storage systems provided by Microsoft, such as Outlook, Teams/SharePoint, or ShareFile.
Where will it be stored?	In HOLOSS' server and in the NEO-CYCLE SharePoint (Microsoft Teams).
Will you re-use any existing data and how?	All the data used for this study will be entirely novel collected from the NEO-CYCLE project.
What is the expected size of the data?	The allotted storage capacity for this material is 6GB if necessary.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	Data will be accessible to the project partners, and useful for the same partners. - via Microsoft Teams (NEO-CYCLE SharePoint). This data will be adapted for public visualization via Deliverables.
Will you generate any research data that could be shared publicly (part of open science)?	Yes, preliminary LCSA: D9.1.



## 8.2. Task 9.2: Preliminary social Life Cycle Assessment (s-LCA) (Lead: HOLOSS)

Participating: HOLOSS, ALL

<b>Partner: HOLOSS</b> <b>Task 9.2 Preliminary social Life Cycle Assessment</b>	
What is the purpose of the data collection/generation and its relation to the project's objectives?	The data collected will be used to create flowcharts of the processes and to fill in the Life Cycle Inventories needed to do the Life Cycle Sustainability Assessment.
What types and formats of data will the project/task generate/collect?	Emails, Excel, PowerPoint, and Word documents, as well as reports, should be produced and saved inside the cloud storage systems provided by Microsoft, such as Outlook, Teams/SharePoint, or ShareFile.
Where will it be stored?	In HOLOSS' server and in the NEO-CYCLE SharePoint (Microsoft Teams).
Will you re-use any existing data and how?	All the data used for this study will be entirely novel collected from the NEO-CYCLE project.
What is the expected size of the data?	The allotted storage capacity for this material is 6GB if necessary.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	Data will be accessible to the project partners, and useful for the same partners. - via Microsoft Teams (NEO-CYCLE SharePoint). This data will be adapted for public visualization via Deliverables.
Will you generate any research data that could be shared publicly (part of open science)?	Yes, preliminary LCSA: D9.1.



### 8.3. Task 9.3: Preliminary Energy Efficiency and Techno-Economic Assessment (Lead: UniTO)

Partner: UNITO	
Task 9.3: Preliminary Energy Efficiency and Techno-Economic Assessment	
What is the purpose of the data collection/generation and its relation to the project's objectives?	To identify relevant aspects and data related to NEO-CYCLE upcycling processes, with focus on critical raw materials and circularity.
What types and formats of data will the project/task generate/collect?	All data and process descriptions: flow charts, energy balance, mass balance, quality and technical performance of materials / products
Where will it be stored?	In a project deliverable (Word files, PDF files, Excel files). Raw data from project partners will be stored in a project shared folder.
Will you re-use any existing data and how?	Data and process descriptions will be asked to project partners. Existing data communicated by project partners will be incorporated in the deliverables (reports).
What is the expected size of the data?	Max 50 MB
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	Raw data from project partners will be stored in a project shared folder. Only project partners will have access to raw data and initial elaboration. The final reports (Deliverables) will be public.
Will you generate any research data that could be shared publicly (part of open science)?	The final reports (Deliverables) will be public.

### 8.4. Task 9.4: Circular economy and Criticality indicators (Leading: UniTO)

Partner: UNITO	
Task 9.4: Circular economy and Criticality indicators	
What is the purpose of the data collection/generation and its relation to the project's objectives?	To identify relevant aspects and data related to NEO-CYCLE upcycling processes, with focus on critical raw materials and circularity.
What types and formats of data will the project/task generate/collect?	All data and process descriptions: flow charts, energy balance, mass balance, quality and technical performance of materials / products.
Where will it be stored?	In a project deliverable (Word files, PDF files, Ecel files). Raw data from project partners will be stored in a project shared folder.



Will you re-use any existing data and how?
Data and process descriptions will be asked to project partners. Existing data communicated by project partners will be incorporated in the deliverables (Reports).
What is the expected size of the data?
Max 50 MB
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?
Raw data from project partners will be stored in a project shared folder. Only project partners will have access to raw data and initial elaboration. The final reports (deliverables) will be public.
Will you generate any research data that could be shared publicly (part of open science)?
The final reports (deliverables) will be public.

### 8.5. Task 9.5: Gender issues considerations across the value chain (Leading: AEI)

Participating: AEI, ALL

<b>Partner: AEI</b>
<b>Task 9.5 Gender issues considerations across the value chain</b>
What is the purpose of the data collection/generation and its relation to the project's objectives?
For implementation Task 9.5: Gender issues considerations across the value chain
What types and formats of data will the project/task generate/collect?
A bibliography of publications, quantitative data on the participation of men and women in project activities.
Where will it be stored?
In the AEI cloud environment (DROPBOX).
Will you re-use any existing data and how?
Yes, we will use Internet publications for analysis.
What is the expected size of the data?
Up to 500 MB
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?
Free access to project partners by the links to the AEI cloud in DROPBOX.
Will you generate any research data that could be shared publicly (part of open science)?
No.



## 8.6. Task 9.6: Digital product passport (DPP) (Leading: UPC)

Participating: UPC, FHA

<b>Partner: UPC</b> <b>Task 9.6 Digital product passport</b>	
What is the purpose of the data collection/generation and its relation to the project's objectives?	The DPP represents a structured collection of product related data. The purpose of the data collection within the DPP is to support the recent Ecodesign for Sustainable Products Regulation (ESPR) that defines measures for eco-design and sustainability with tools that facilitate circularity. Within the project, we will develop a DPP prototype system.
What types and formats of data will the project/task generate/collect?	The data describes products, mostly about the products' environmental sustainability. The DPP is product related, with specific requirements per product group. Data types will be names, identifiers, numerical values. JSON will be used for data formatting.
Where will it be stored?	DPP infrastructure is expected to be provisioned as Internet-based services. For this, the data will be stored in cloud-based services. As of today, the DPP has not yet been standardised and there is an on-going standardisation process within which different technical options are considered.
Will you re-use any existing data and how?	As of today, there is a very limited availability of open source DPP systems. We may expect, however, that along the standardisation process, publicly available reference implementation with sample data will be provided. We will consider re-using such or other existing sample data to test and experiment the system.
What is the expected size of the data?	If public datasets become available, they might be in the MB range. For the experimentation with specific items, the initially expected size of that data is in the KB range.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	The DPP system we will develop will be made available in an open git repository with GNU AGPL license along with the data used for testing. Therefore, the data that we generate will be accessible by all stakeholders. The data that we use will have its relevance for the testing and demonstration of the specific system we develop.
Will you generate any research data that could be shared publicly (part of open science)?	We will generate research data that describe the DPP system that we will have developed and its performance. We will publish our results in scientific publications, and we will apply open science principles to our publications.



<b>Partner: FHA</b> <b>Task 9.6 Digital product passport (DPP)</b>	
What is the purpose of the data collection/generation and its relation to the project's objectives?	The DPP represents a structured collection of product related data. The purpose of the data collection within the DPP is to support the recent Ecodesign for Sustainable Products Regulation (ESPR) that defines measures for eco-design and sustainability with tools that facilitate circularity. Within the project, we will develop a DPP prototype system.
What types and formats of data will the project/task generate/collect?	The data describes products, components and materials mostly about the products' environmental sustainability. The DPP is product related, with specific requirements per product group. Data types will be names, identifiers, numerical values. JSON will be used for data formatting.
Where will it be stored?	DPP infrastructure is expected to be provisioned as Internet-based services. For this, the data will be stored in cloud-based services. As of today, the DPP has not yet been standardised and there is an on-going standardization process within which different technical options are considered. The DPP will be a decentralized system therefore data will be stored in different clouds.
Will you re-use any existing data and how?	As of today, there is a very limited availability of open source DPP systems. We may expect, however, that along the standardization process, publicly available reference implementation with sample data will be provided. We will consider re-using such or other existing sample data to test and experiment the system.
What is the expected size of the data?	If public datasets become available, they might be in the MB range. For the experimentation with specific items, the initially expected size of that data is in the KB range.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	The DPP system we will develop will be made available in an open git repository with GNU AGPL license along with the data used for testing. Therefore, the data that we generate will be accessible by all stakeholders. The data that we use will have its relevance for the testing and demonstration of the specific system we develop. Access management is an important topic, as different stakeholders have different needs. Beyond data accessible by all stakeholders, the project will have data with limited access for demonstration purposes.
Will you generate any research data that could be shared publicly (part of open science)?	We will generate research data that describe the DPP system that we will have developed and its performance. We will publish our results in scientific publications, and we will apply open science principles to our publications.



## 9. Data management in Work package WP11 – Communication, Dissemination, Exploitation and Training I.

This WP will maximise the impact of the project’s results and outreach through dissemination and communication of the project results to a wide range of relevant audiences, ensure that necessary steps will be taken to achieve suitable protection of results generated in the project. Map the post-project phase and introduce how each of the project outputs will be used in commercial exploitation activities for business growth and competitiveness. Map the market for uses and needs of the different sectors and identify opportunities and market failures to overcome. Rise stakeholders’ awareness and engagement, targeting 30-50 participants in each event to monitor their needs. Develop training activities to reach inclusion and new jobs.

### 9.1. Task 11.1 Plan for the Dissemination and Exploitation of Results (PEDR), Task 11.5 IP management and Task 11.6 Exploitation of results and market potential assessment (Lead: LCI)

PARTICIPATING: ALL

<b>Partner: LCI</b> <b>Task 11.1 Plan for the Dissemination and Exploitation of Results (PEDR)</b> <b>Task 11.5 IP management</b> <b>Task 11.6 Exploitation of results and market potential assessment</b>	
What is the purpose of the data collection/generation and its relation to the project’s objectives?	Data related to the exploitation of the project results will be created and stored.
What types and formats of data will the project/task generate/collect?	Emails and Word documents, Excel sheets will be generated and stored on the cloud storages of Microsoft (e.g. Outlook, Teams/SharePoint), or ShareFile, hosted by the coordinator.
Where will it be stored?	On our server.
Will you re-use any existing data and how?	All data will be novel.
What is the expected size of the data?	The reserved space for this data is 6 GB.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	Data will be accessible to the project partners only. Data will be accessible, to interested official parties on request.



Will you generate any research data that could be shared publicly (part of open science)?

No.

## 9.2. Task 11.2 Communication and Dissemination Activities (Lead: LCI)

PARTICIPATING: ALL

<b>Partner: LCI</b>	
<b>Task 11.2 Communication and Dissemination Activities</b>	
What is the purpose of the data collection/generation and its relation to the project's objectives?	LCI will use data related to communication and dissemination materials to promote the NEO-CYCLE project and each partner that is part of the Consortium. LCI will do so to maximize the dissemination of the Project activities and to involve stakeholders.
What types and formats of data will the project/task generate/collect?	Emails, word documents, flyers, brochures, websites, and posts for social media. The material will be available online and in the Project ShareFile.
Where will it be stored?	In our own server.
Will you re-use any existing data and how?	All data will be new.
What is the expected size of the data?	The reserved space should be less than 15 GB.
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	Data will be accessible to partners of the project and interested stakeholders (e.g. website with partners presentations will be public, project brochure could be downloaded by interested users). The data might be useful for any stakeholders interested in NEO-CYCLE activities.
Will you generate any research data that could be shared publicly (part of open science)?	No.

## 9.3. Task 11.3. Clustering and networking at different scales and stakeholder's engagement (Lead: ISMC)

Participating: ALL

<b>Partner(s): ISMC (and AE ECOCAST)</b>	
<b>Task 11.3. Clustering and networking at different scales and stakeholder's engagement</b>	
What is the purpose of the data collection/generation and its relation to the project's objectives?	



Data collected will be used to prepare and carry out clustering activities, including events, conferences, papers, and reports.
<b>What types and formats of data will the project/task generate/collect?</b>
It will be general information about projects, initiatives, and organisations related to clustering activities carried out throughout the project. It will mostly be information about organisations' names and addresses, general descriptions, and data and info generally publicly available. Analysis and reports compiled with the information may have tabular format, descriptive format and other formats suitable for dissemination and communication purposes.
<b>Where will it be stored?</b>
On ISMC and ECOCAST computer systems, secured and accessible only by staff as well on project shared computer resources such as MS Teams or SharePoint repositories managed by the Coordinator or WP leader.
<b>Will you re-use any existing data and how?</b>
We will reuse data from lists, repositories, and libraries publicly available. Information will be used to carry out analysis and compile reports on clustering activities and other activities in relation to Task 11.3
<b>What is the expected size of the data?</b>
N/A
<b>Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?</b>
Information compiled with data analysis will be shared with project partners. As the original information is mostly publicly available information, the raw data will not need to be proactively shared.
<b>Will you generate any research data that could be shared publicly (part of open science)?</b>
It is possible that there will be some data compiled from analysis that will be shared on open science communities, such as ZENODO.

#### 9.4. Task 11.4. Synergies with S3 regions, EU industrial clusters and RMIS (Lead: ISMC)

Participating: ISMC

<b>Partner(s): ISMC (and AE ECOCAST)</b>
<b>Task 11.4. Synergies with S3 regions, EU industrial clusters and RMIS</b>
<b>What is the purpose of the data collection/generation and its relation to the project's objectives?</b>
Data collected will be used to prepare and carry out synergy activities with S3 regions, clusters, and institutions. Activities will include events, conferences, papers, and reports.
<b>What types and formats of data will the project/task generate/collect?</b>



It will be general information about projects, initiatives, and organisations related to activities to generate synergy at institutional level and carried out throughout the project.

It will mostly be information about organisations' names and addresses, general descriptions, and data and info generally publicly available.

Analysis and reports compiled with the information may have tabular format, descriptive format and other formats suitable for dissemination and communication purposes.

**Where will it be stored?**

On ISMC and ECOCAST computer systems, secured and accessible only by staff, as well on project shared computer resources such as MS Teams or SharePoint repositories managed by the Coordinator and the WP leader.

**Will you re-use any existing data and how?**

We will reuse data from lists, repositories, and libraries publicly available. Information will be used to carry out analysis and compile reports on clustering activities and other activities in relation to Task 11.4

**What is the expected size of the data?**

N/A

**Whom will the data be shared? Under what conditions?  
To whom might the data be useful ('data utility')?**

Information compiled with data analysis will be shared with project partners. As original information is mostly publicly available information, the raw data will not need to be proactively shared.

**Will you generate any research data that could be shared publicly (part of open science)?**

It is possible that there will be some data compiled from analysis that will be shared on open science communities, such as ZENODO.



## 9.5. Task 11.7 Skills strategy and training activities per specific sector (Lead: AEI)

Participating: AEI, CONFA

Partner: CONFA	
Task 11.7 Skills strategy and training activities per specific sector	
What is the purpose of the data collection/generation and its relation to the project's objectives?	<p>The purpose of data collection and generation, based on the experience in the Fields and i-Restart projects, is to establish a structured framework for course classification and evaluation.</p> <p>This involves defining a course classification grid based on the course catalogues available in the projects' reserved areas. A comparison criterion will be developed to support this structure, along with a correspondence table that aligns the expected learning outcomes and competencies.</p> <p>Furthermore, all completed training courses are stored for archival purposes, and any files generated are retained to ensure proper documentation of the training process. These efforts aim to create a cohesive and consistent approach to course assessment and competency tracking, facilitating improved training practices and alignment with the learning objectives set out in similar initiatives.</p>
What types and formats of data will the project/task generate/collect?	<ul style="list-style-type: none"> <li>- Text content (.pdf, .docx, .pptx):</li> <li>- Videos (.mp4, .avi, .mov):</li> <li>- Images, graphics, and interactive content (.jpg, .png, .html, .xml):</li> </ul>
Where will it be stored?	<p>The material will be housed in the storage facility available in the context on the NEO-CYCLE project. Depending on the decision to be taken, the storage facility, could be in common with the repository already set-up for both the Fields and i-Restart projects. Therefore, the specific requirement could be adapted to the formats already in force in the mentioned projects.</p>
Will you re-use any existing data and how?	<p>Concerning the training modules some already existing materials could be reused in the context of the NEO-CYCLE training processes according to the needs.</p> <p>As for the skills and competencies certification the design of the training curricula, the certification framework (EQF, ECVET and ESCO) will be considered.</p>
What is the expected size of the data?	<ul style="list-style-type: none"> <li>- <b>Text Content:</b> size estimate 1–200 MB for documents, depending on the number and quality of graphics.</li> <li>- <b>Videos:</b> Assuming HD quality (720p or 1080p), each hour of video can be about 100 MB to 1 GB for 720p, or 1–2 GB for 1080p.</li> <li>- <b>Images, graphics and interactive content:</b> size estimate 1–200 MB.</li> </ul>
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?	<p>The access procedure will be defined at 3 levels: 1 members of the projects, 2 external training experts, and 3 training providers</p>

Will you generate any research data that could be shared publicly (part of open science)?
No at the moment but is not excluded.

<b>Partner: AEI</b>
<b>Task 11.7 Skills strategy and training activities per specific sector</b>
What is the purpose of the data collection/generation and its relation to the project's objectives?
Analysing approaches to skills development and justifying the plan and scenarios for training activities for implementation Task 11.7 "Skills strategy and training activities per specific sector»
What types and formats of data will the project/task generate/collect?
A bibliography of publications, training materials, lists of event participants, videos and presentations.
Where will it be stored?
In the AEI cloud environment (DROPBOX).
Will you re-use any existing data and how?
Yes, we will use Internet publications for analysis.
What is the expected size of the data?
Up to 2GB
Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?
Free access to projects partners by the links to the AEI cloud in DROPBOX.
Will you generate any research data that could be shared publicly (part of open science)?
No.

## 9.6. Task 12.8-13.8 Standardisation assessments (Lead: ASRO)

Participating: ASRO, all

<b>Partner: ASRO</b>
<b>Task 12.8-13.8 Standardisation assessments</b>
What is the purpose of the data collection/generation and its relation to the project's objectives?
Purpose of the data collection:



<ul style="list-style-type: none"> <li>• Screening existing standards: Identify existing standards that are relevant to our project. Screening includes standards from different national, European, and international standardization organizations and other specification-setting organizations.</li> <li>• Also collects information on ongoing standardization initiatives and relevant Technical Committees.</li> <li>• Analysing identified existing standards, together with the experts from the partners involved in the project and with other stakeholders too.</li> </ul>
<b>What types and formats of data will the project/task generate/collect?</b>
PDF and Excel files
<b>Where will it be stored?</b>
Microsoft SharePoint cloud
<b>Will you re-use any existing data and how?</b>
Yes, but only inside of the project
<b>What is the expected size of the data?</b>
2 GB approx.
<b>Whom will the data be shared? Under what conditions? To whom might the data be useful ('data utility')?</b>
Yes, but only for the internal users of the platform
<b>Will you generate any research data that could be shared publicly (part of open science)?</b>
Standards have copyrights; therefore, the Parties will take all necessary measures to ensure the respect of copyright on the standards used in the project, resulting from this agreement and solely for the purposes of the project. This obligation shall survive till the termination of the Agreement, and beyond, when the Parties continue to respect the intellectual property rights of the standards. Any partial or full reproduction of the standards may only be made with the written consent of the ASRO, which remains the copyright holder of the standards and is the only one authorized to distribute the standards by sale.



## 10. Data Standardization practices

**Standardizing data management** at the project level helps prevent inconsistencies, improves collaboration, and ensures data integrity. By following the practices below, we can ensure consistency, accuracy, and reliability in your project's data management.

The consortium will follow the steps below to achieve standardization:

### 1. Define Data Standards and Protocols

- Establish clear naming conventions for files, folders, and datasets.
- Use standardized formats (e.g., CSV, JSON, XML) across the project.
- Define data entry guidelines to avoid discrepancies (e.g., date formats, decimal separators).

### 2. Implement a Centralized Data Repository

- Use a shared cloud storage solution (e.g., Microsoft Teams, Google Drive, OneDrive, SharePoint).
- Adopt a version control system (e.g., Git, DVC) for structured data.
- Ensure controlled access to prevent unauthorized changes.

### 3. Use Metadata and Documentation

- Maintain a data dictionary explaining fields, types, and expected values.
- Implement metadata tagging for easier retrieval and organization.
- Document data sources, collection methods, and processing steps.

### 4. Standardize Data Collection and Entry

- Use predefined templates for data collection forms and spreadsheets.
- Automate data entry where possible (e.g., using APIs, ETL tools).
- Set up validation rules to catch errors before data is stored.

### 5. Establish Data Governance and Quality Control

- Assign data stewards responsible for ensuring compliance with standards.
- Conduct regular data audits to identify inconsistencies.
- Use automated data validation tools to flag anomalies.

### 6. Implement Consistent Data Storage and Backup Policies

- Define a folder structure with clear hierarchy and naming conventions.
- Implement regular backups to prevent data loss.
- Use database normalization techniques to reduce redundancy.

### 7. Train Team Members and Enforce Compliance

- Conduct training sessions to ensure all team members follow protocols.
- Maintain a data management policy document for reference.
- Use periodic compliance checks to reinforce standards.



## 11. Preservation of data and data storage timeline

Data generated throughout the project will be **preserved beyond the project's lifecycle**. Partners are expected to keep any data generated on this project for the duration of the project and **seven years** after and store it on the cloud storage of Microsoft (e.g. Outlook, Teams/SharePoint), or ShareFile, hosted by the coordinator.

Data intended for general public use will be uploaded to **Zenodo** where it will be held for **indefinite time** and will be available free of charge. The **webpage** will be live for **two years** after the project ends.



## 12. ANNEX

### 12.1. ANNEX 1. The key elements of the open science approach

**A. Open access (OA) to scientific publications:** The consortium will ensure immediate OA to all peer-reviewed scientific publications generated in the project (at the latest at the time of publication) via Zenodo, an OpenAIRE compliant repository, and institutional repositories, such as the one of **VMU** (<https://portalcris.vdu.lt/eng> Publications) or the **WUT** Base of Knowledge (<https://repo.pw.edu.pl>) deposited in Zenodo will be automatically indexed in OpenAIRE to ensure the largest possible impact. Each partner will provide information about any research output, tool or instrument needed to validate the conclusions of the publication via the repository. The deposited publications will be identified through accessible bibliographic metadata, including the terms European Union and Horizon Europe; name of the action, and grant number; publication date; and a persistent identifier, e.g., DOI. The publication in Open Research Europe will be favoured.

**B. Open access to research data:** The consortium will provide open access to research data and other outputs (e.g., software, models, algorithms, workflows) following the principle “as open as possible, as closed as necessary”. All data or other results needed for validation of conclusions of peer-reviewed publications will be granted open access through Zenodo. The consortium partners will ensure that the publications clearly refer to the availability of such data (e.g., referring to the DOI identifier of the data). Readers will be able to access the data underpinning the results presented in any publications, ensuring reproducibility and transferability (or interoperability) for all potential users, academic, industry and citizen scientists. The access conditions to other data generated in the project will be detailed in the Data Management Plan (M6). Open access to research data will be preferred and exceptions will only be allowed for valid reasons relating to data protection rules, security interests, IPR, EU global economic competitiveness and other legitimate interests. European Open Science Cloud will be also used when possible.

**C. Responsible research data management:** The consortium will manage the data responsibly and in line with FAIR (Findable, Accessible, Interoperable, Reusable) Data Principles. Following these principles will facilitate the collaboration and data sharing between partners to deliver the project outputs with the highest quality as well as the traceability, reproducibility, and reusability of data beyond the project. The data management strategy will be outlined in the DMP (see the next bullet point for more details).

**D. Other open science practices:** The consortium will promote the engagement in other open science practices, such as participation in citizen science actions, open peer-review, sharing of pre-prints (e.g., in arXiv, bioRxiv) and protocols, workflows and analytic scripts (e.g., in GitHub open repository for code sharing). **FHA** has Gitlab for code sharing and development which can be shared and used for research purposes in the consortium. These practices will not only increase the visibility and re-usability of the research outputs, but also the reproducibility and replicability, and the excellence and impact of the results. The participants have a strong track record in these practices. The open science practices will be part of a broader Responsible Research



and Innovation (RRI) approach that will promote stakeholder engagement, through communication and dissemination actions; gender equality, through the promotion of gender balance in R&D teams and in decision-making processes; science education, through participatory research agendas and training activities for the engagement of students and young researchers; and ethics and research integrity, through continuous orientation, reflection and deliberation on the decisions, actions and values.

## 12.2. ANNEX 2. Fair data

### F

**Findability:** Each item deposited in Zenodo will be issued a persistent and unique identifier (i.e., a DOI). All project records will be described with metadata that will ease the findability (e.g., data description, keywords, project **NEO-CYCLE**) and will be linked to the ORCID of the researchers who produced the data to ensure traceability. Data deposited in Zenodo will be retained for the lifetime of the repository (20 years at least).

### A

**Accessibility:** At the time of deposit, each item will be granted either open, closed, or embargoed access as per the provisions in the DMP and the IP management strategy. The reasons for closed data will be clearly explained in the DMP and will comply with the legitimate reasons allowed by the EC. Any data needed to validate the results published in peer-reviewed publications will be granted open access through Zenodo.

### I

**Interoperability:** The preferred data formats will be those facilitating the data interoperability, i.e., nonproprietary; open, documented standards; in common usage by the research community; using standard character encodings (ASCII, UTF-8); and preferably uncompressed. The data deposited in Zenodo will be described with rich metadata compliant with DataCite's Metadata Schema. Also, **NEO-CYCLE** will comply with European and international standards to set a common research data terminology within the specific fields, e.g.: bio-based products (CEN/TC 411), environmental management (CEN/SS S26), waste management (CEN/TC 183), units and symbols (CEN/SS F02), energy efficiency and saving calculation (CEN/CLC/JWG 4).

### R

**Reusability:** Open data deposited in Zenodo will be released with a CC BY license or equivalent. If specific software or tools are needed to access or re-use the data, information about these will be provided in a complementary text file. Deposited closed data will clearly indicate the reusability conditions (license) under which these data can be accessed and how these data can be requested.



### 12.3. ANNEX 3. Declaration of consent for to the publication of photographs

#### Declaration of consent to the publication of photographs taken by the NEO-CYCLE

In order to promote the NEO-CYCLE and for the purposes of public relations, we intend to publish photographs of the project's participants. We therefore ask for your permission to use the photographs.

For the purposes listed, I agree to the publication of photographs by name via the following communication channels: *(please tick the appropriate box)*

- Intranet of the NEO-CYCLE (e.g. department photo, address book),
- Internet pages of the NEO-CYCLE including all associated brands (e.g. photo gallery of the event, press releases),
- Presence of the NEO-CYCLE in social networks (e.g. X, LinkedIn),
- Print media (e.g. brochures, flyers, posters),
- Digital media (e.g. newsletters, presentations).

I agree to the processing at the following events:

- public events (e.g. "Long Night of Science", Open House Day, exhibitions, science festivals)
- closed events (e.g. Award ceremonies, congresses, summer festivals, annual receptions, or opening ceremonies)

In principle, the names of the persons depicted can be mentioned and, if necessary, individual persons are presented in a targeted manner. Insofar as the photographs indicate my ethnic origin, religion or health, my consent also refers to this information within the scope of the above-mentioned purposes.

The granting of consent is voluntary. A given consent can be revoked in writing to [office@lcinnoconsult.com](mailto:office@lcinnoconsult.com) at any time - in whole or in part - with effect for the future. Consent does not automatically end at the end of the employment relationship. No disadvantages arise from the refusal of consent or a revocation.

In addition, I / we confirm that we have taken note of the further information on the declaration of consent.

_____	_____	_____
_____	_____	_____
Name of the person concerned concerned	Place, date	Signature of the person



Place, date

Signature of the custodian(s)

*(for minors)*

## Information on the declaration of consent

With this consent, the person concerned agrees to the publication of the communication channels designated by him or her without any restriction of time, space, and content. For this purpose, the photos and this declaration of consent are stored in the NEO-CYCLE. The granting of rights for the publication of the pictures takes place without remuneration and includes a processing right, insofar as these image changes are not disfiguring. Any further processing and transmission of the photographs or publication via other communication channels requires separate consent.

A revocation causes that photos published on the Internet are removed or made unrecognizable. No further recordings of the person concerned will be posted or used. Deletion of the recordings from the Internet presence can last up to four weeks after receipt of the revocation. In the case of publication of group recordings, the subsequent revocation of an individual person does not in principle lead to subsequent removal, unless the interests of the individual person prevail in the individual case.

Through a publication on the Internet, the photos can be accessed by anyone worldwide. It is possible for third parties to download, store and use the published images for unknown purposes, possibly in conjunction with other available information, even after withdrawing this consent. Through the archive function of search engines, it is possible that the photo and video recordings can still be retrieved even if the information from the Internet offers has already been removed or changed.

For data protection issues and to exercise my rights pursuant to Chapter III of the General Data Protection Regulation (GDPR), I can contact the data protection officer at LC Innoconsult. In addition, pursuant to Article 77 GDPR, every data subject has the right to lodge a complaint with a data protection supervisory authority if it is suspected that the processing of personal data is unlawful.



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