



D1.1 – Data Management Plan

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DOCUMENT CONTROL SHEET

Project	WIDEX– NOVEL DOMESTIC BATTERY GRADE LITHIUM CARBONATE VALUE CHAIN FOR GREEN LIFE
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General information				
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Description of the related task and the deliverable. Extract from DoA	<p>Task 1.1 / 2.1: Project management</p> <p>The project manager and the coordinator are responsible for the coordination on behalf of the consortium with the strong support from experienced ICAMCYL project support team and the WP Leaders. The principles of project management, including IPR issues and decision-making procedures will be formalised in the CA. Advisory Board (AB) is the consulting body of the consortium for technological and scale units. TUKE is responsible for monitoring and guiding the project actions and ensures that quality of the work and required deliverables are of high level. The detailed Data management plan DMP (D1.1) will be published in M6 and regularly updated throughout the project. It will establish a baseline to regulate ownership and access to key knowledge (IPR, foreground, data security, ethics, etc.), in line with the FAIR principles and the D&E&C plan. After the KOM, a consortium meeting will take place every 6 months. However, to reduce travelling expenses and avoid interference with the onsite activities, on-site consortium meetings are reduced to KoM - MS1, M24 and M36- MS15.</p>			
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EXECUTIVE SUMMARY

The objective of this Data Management Plan (DMP) is to establish the methods for the data management, including how data is collected, shared, processed, generated and/or gathered throughout the duration of the project. The DMP is based on the Horizon Europe template and is a living document that is updated as needed during the period of the project in case of important changes. This DMP deliverable describes the data management policy and implementation strategies. It includes the relevant data that will be produced during the project activities.

This DMP provides a comprehensive approach to data management, addressing key aspects such as:

- **Data Lifecycle Management:** Managing research data during and after the project.
- **Methodology and Standards:** Defining the methodologies and standards to be used.
- **FAIR Data Principles:** Implementing procedures to ensure data is Findable, Accessible, Interoperable, and Reusable (FAIR).
- **Data Security:** Establishing procedures to protect data security.

By following these guidelines, the project aims to ensure the efficient management, preservation, and reuse of its valuable data assets.

The DMP will comply with the General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data) as well as the ISO 15489-1:2001 standard for Information and documentation — Records management.

This is the first version of the DMP, which provides an initial description of the expected datasets. This document will be actively maintained and regularly updated by the Coordinator and will be used for daily data management and monitoring.

ABBREVIATIONS AND ACRONYMS

Glossary	
Acronym	Meaning
C&D	Communication and Dissemination
CA	Consortium Agreement
CRM	Critical Raw Material
DMP	Data Management Plan
DoA	Document Agreement
FAIR	Findable, Accessible, Interoperable and Re-usable
GA	Grant Agreement
IPR	Intellectual Property Rights
R&D	Research and Development
RM	Raw material
SDGs	Sustainable Development Goals
TUKE	Technical University of Kosice
WP	Work Package

1.Introduction

1.1 WIDEX project

Green and sustainable raw material (RM) recovery, particularly for Critical Raw Materials (CRM), is crucial to Europe's economy due to the current global CRM crisis. RMs form a strong industrial base, producing a broad range of goods and applications used in everyday life and modern technologies, and are key to the Green Transition. The extracted materials are indispensable for significant economic and strategic sectors, such as electronics, healthcare, metals, automotive, defence or renewable energy sectors. The impending need to cover these needs within European borders, reducing dependence on third countries was recently reflected in the European Raw Materials Act (March 2023), but it is key that these efforts are also in line with the environmental goals reflected in the EU Green Deal and the United Nations' Sustainable Development Goals (SDGs), especially SDG12 – Responsible Consumption and Production, through advanced non-invasive green technologies and the application of sustainability criteria and activities. However, unreliable supply of RM and difficult substitution of CRMs is a growing concern within the EU and across the globe. To reduce dependence on RM imports in Europe, it is necessary to evaluate the potential of non-exploited deposits and increase the investigation and the techniques for their optimised recovery in Europe, in the framework of the Circular Economy. The European Union has generated strategies and methodologies on sustainability surrounding RM, specifically in resource recovery. Widening European countries are crucial to make the most of the potential within European borders and drive independence from third countries. An effort must be made to bring their excellence to an EU-level performance to make the most of their potential within any given speciality. However, in the current environment, this growth and support must be in line with a greener and more sustainable approach. It is known and recognised that in Slovakia, the total mineral production has reached a value of 510 million USD and 46% of the Slovak geological reserves are in the Kosice region. Within Slovakia, TUKE is the key reference centre and a leading mining university.

To address these challenges, the WIDEX project aims to strengthen research and innovation in green and sustainable extractive technologies as well as in the effective sustainable use of the earth's resources and in innovative recycling technologies for the EU's critical and strategic raw materials. In addition, the WIDEX project is also focused on knowledge transfer and the

development of competences in project management and administration, which will also strengthen TUKE's excellence and can reduce the disparities within EU countries.

1.2 Scope and objectives of the Deliverables

This Data Management Plan describes how WIDEX data will be managed, providing for the availability and usefulness of project output data. This document will be used by all project participants to inform basic project management, including issues related to intellectual property rights and related policies and decisions.

1.3 WIDEX Consortium overview

The WIDEX Consortium has been constructed carefully considering the potential for knowledge transference in technologies and skills that are key to boosting TUKE's capabilities and position within the European research environment. The consortium consists of eleven partners from eight European countries, Table 1.

Table 1: Widex Consortium Participants

Participants N°	Participant organisation name	Acronym	Country
1	TECHNICAL UNIVERSITY OF KOSICE	TUKE	Slovakia
2	FUNDACIÓN ICAMCYL	ICAMCYL	Spain
3	IBERIAN SUSTAINABLE MINING CLUSTER	ISMC	Spain
4	MNLT INNOVATIONS IKE	MNLT	Greece
5	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	IKTS	Germany
6	IDENER RESEARCH AND DEVELOPMENT AIE	IDE	Spain
7	CONSENTIA	CON	France
8	LAPLAND UAS	LAPLAND	Finland
9	AVENIR ENERGIE ENVIRONNEMENT AVENIA (POLE AVENIA)	AVENIA	France
10	EIT RAW MATERIALS CLC East	EITRM	Poland
11	KOSICE REGIONAL GOVERNMENT	KSK	Slovakia

2. DATA MANAGEMENT PLAN

WIDEX project will make 18 out of 24 total deliverables available to the public, fulfilling the open access requirement of Horizon Europe funding programs. Project deliverables are categorized based on their nature, as defined by Horizon Europe:

- R: Reports and Documents (excluding periodic and final reports)
- DEC: This includes websites, patent applications, press releases, media content, and videos
- Data Management Plan (DMP)
- Ethics and Security Deliverables: These address ethical considerations and project security
- Other (as needed): This category covers any deliverables that don't fit into the above categories

Purpose of the data collection and relation to the objectives of the project

The data to be collected can be divided in two general categories:

- 1) Personal data: different mailing and attendance lists, as well as project partner contact lists.
- 2) Shared scientific data: information shared during workshops, training, staff exchange programs, etc. Shared scientific data is expected to generate/gather:
 - a) Experimental and observational data (*.txt, *.xlsx);
 - b) Models and simulations;
 - c) Scientific texts: manuscripts (*.docx, *.pdf);
 - d) Presentations (*.pptx);
 - e) Dissemination material: fact-sheets, images, videos...etc.
 - f) Management documents: deliverables (*.docx, *.pdf).

For internal communications between the members of the consortium, the Teams platform will be used as an internal interactive repository. This repository is divided in following the WPs structure to exchange information, update documents and facilitate collaboration and interaction securely. TUKE as the coordinator of the project is responsible for granting the appropriate permissions to the team members.

The data collected/gathered are required to enable the achievement of the objectives of the project, namely to:

- To boost TUKE to an excellent EU-level reference centre in the field of green and sustainable approaches for mining

- To improve and support TUKE's excellence capacity through an interdisciplinary group of researchers and administrative staff.
- The knowledge and capabilities transfer regarding green advanced technologies and sustainable approaches and administration and EU leadership capabilities will enable to closing the R&D gap within the EU
- To establish a strong industrial pole surrounding TUKE and engage and position them in their S3 mining region.

All confidential data will be treated with extreme care and shared only within the consortium if the situation requires so, with a Non-Disclosure Agreement (NDA) set when necessary. The data will be stored on secure servers with remote backup, internal to the consortium members under the controls specified in their existing ISO9001 quality management systems. During and after the project selected data may be made available beyond the present consortium, subject to agreement between partners, the terms of the and IP Protection. Non-confidential data will be used for C&D purposes and shared digitally and physically to expand general knowledge of the project and drive visibility of TUKE.

Re-using of data

The WIDEX consortium currently does not plan to reuse any external datasets beyond the expertise and knowledge of its partners. Therefore, the project will leverage the basis of the scientific background of the partners. Any future reuse of specific datasets within the project will be clearly documented and communicated.

Origin of data and ownership

New data will be originated by the project activities. Examples include:

- a) **Meetings:** Discussions and presentations held within the consortium;
- b) **Models and simulations:** Development of models to predict process interaction and behaviour, and simulations to optimise processes for extracting metals from primary raw materials or waste using python and other software;
- c) **Documentation:** published or confidential reports, presentations; website contents, social media posts;
- d) **Multimedia resources:** Images, videos, animations to document the activities, represent and communicate achievements etc.

Size of data

The expected size of data is currently unknown. However, WIDEX will prioritize a balance between storage efficiency and information availability will be considered. Compressed formats (e.g. .zip or .rar) might be used, mainly for sharing purposes, while uncompressed versions of the data will be archived for backup.

Who will make use of the data

The data collected and/or generated in the project will mainly be used by the beneficiaries to carry out the activities necessary to achieve the project's objectives. If the data generated are not considered confidential or as a tool for commercial exploitation, including means of protecting the intellectual property rights (IPR) generated, they will be published on:

- a) the project website (<https://widexproject.eu/>), public area (for reports including deliverables as public under the WIDEX Project Grant Agreement, for the purpose of C&D, etc.),
- b) the MS Teams repository (only for consortium members).

Among these data, we expect a minimum of publication of data used for the preparation of scientific publications.

Protection of personal data

All partners involved in the WIDEX project agree to handle personal data according to EU, international, and national data protection laws, especially the GDPR.

Data Handling principles

- Data Storage and Quality: The project coordinator (WIDEX) is responsible for storing and preserving data, ensuring its quality throughout the project.
- Data Repository: The Teams platform is used as a secure repository and workspace for sharing documents and information. Access is restricted to authorized team members.
- Data Privacy: All data collected will be handled in compliance with the GDPR. Sensitive data, such as contact lists, will be carefully managed.
- Event and Activity Data: When collecting personal data for events or activities, participants will be informed about how their data will be used and their rights. Only authorized individuals can access personal data.
- Data Sharing: Shared scientific data, such as information from workshops or training programs, will be anonymized whenever possible. Identifiable data will only be shared with authorized researchers after verifying the legal basis.

- Data Storage and Identification: New scientific data will be stored in trusted repositories using unique identifiers to ensure data integrity.
- Ethical Considerations: The project adheres to EU requirements for human participants, including gender balance, vulnerable group protection, and disclosure of sensitive information.

For data of a personal character, we propose to use anonymisation as the main strategy to ensure the protection of personal data, and any dissemination of such processed data will be managed according to the existing regulations.

3. FAIR DATA STRATEGY

The data produced during the project will be fully compliant with the FAIR (Findable, Accessible, Interoperable, Reusable) principles and in accordance with the ISO 15489-1:2001 standard for information and documentation, records management as well as the General Data Protection Regulation (GDPR).

3.1 Making data findable

WIDEX project will use MS Teams repository platform (Figure 1) for making research data findable in accordance with the Horizon Europe Open Access Mandate.

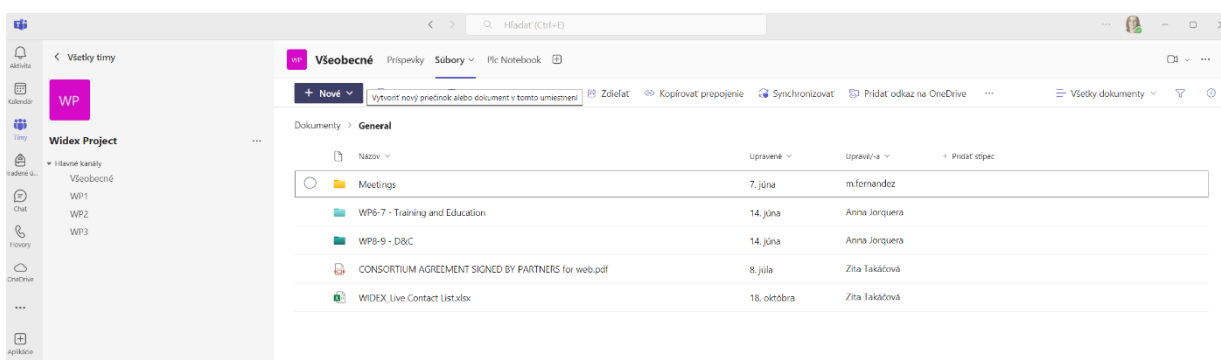


Figure 1: WIDEX Teams platform overview

This shared space is accessible to all consortium members, and the coordinator monitors this group to provide access to team members (Figure 2).

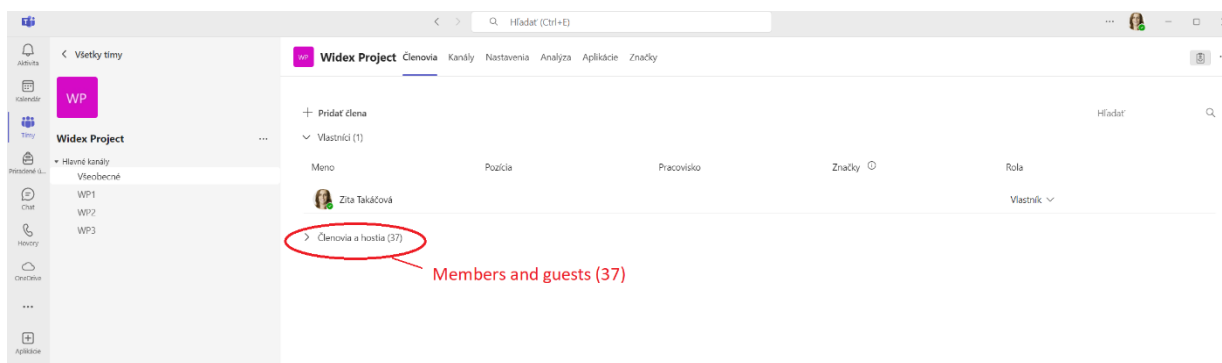


Figure 2: WIDEX project members management

Several arrangements were used to facilitate the searching and reuse of data:

- Folders: the repository was structured into different folders according to the structure of the WP project.
- File names: the file names were standardised to make it easier to find out the contents of each one.
- Deliverable names: documents produced within the project use: deliverable number (in accordance with the DoA), title (in accordance with the DoA), and version (starting from v1 for the draft document, ending with the final version -vf).
- Other documents or reports: they will contain information at the beginning of the documents such as subject, clear version numbering and conclusions.

Moreover, Microsoft Teams includes a functionality that enables users to search documents making easier to find the information needed.

This information will include a table to assemble the versions and modifications of the documents as Table 2 shows.

Table 2: Table of the history panel

Revision History				
Version	Date	Author	Organisation	Status

- Version: single digit version number should be used (e.g. v1 for the first version version);
- Date: DD/MM/YYYYYY of the document;
- Reviewer and organization;
- Status: initial draft, draft review, final review.

The coordinator is responsible for changing the draft number. All deliverables will include a general information panel (see Table 3). Data stored in this format follows FAIR principles because it is properly documented and described.

Table 3: General information panel in Deliverables

General information			
Work Package			
Deliverable			
Due Data	DD/MM/YYYY		
Submission Date	DD/MM/YYYY		
Deliverable Lead			
Dissemination Level		Public (PU)	Confidential (CO)
Document Nature		Report (R)	Other (O)
Description of the related task and the deliverable. Extract from DoA			
Authors			
Reviewers			
Status		Draft	Final

For the proper development of the project, the C&D leads (in this case, the consortium member - ISMC) have published several standardised templates, which are guided by the Results Exploitation and Dissemination Plan. These templates are located on the MS Teams platform and are part of the D8.1 Preliminary Dissemination and Communication Plan, Task 8.1, which was uploaded to the EU Funding & Tenders Portal on 28th August 2024.

3.2 Making data openly accessible

The Participants are required to respect the confidentiality of all data, documents or other materials (in whatever form) that are identified in writing as confidential during the implementation of the Action and until the completion of the Project. All published data and other results will be available on the project website as well as on the partners' website if they are wished to do so.

3.3 Making data interoperable

The level of interoperability of the generated data is expected to be high, as e.g. common file formats are used. Due to the international composition of the consortium, the English language will

be used for all published and internally shared data. If languages other than English are used, e.g. for interviews with local stakeholders, English transcripts/translations will be provided. If any software product is created and published as open data, clear identification of the required operating system will be provided. The choice between the most common operating systems may depend on the specific software architecture and the built-in flexibility of the operating system itself. For better understanding, a glossary table will be provided at the beginning of each deliverable (see table 4).

Table 4: Glossary table provided in at the beginning of each deliverable

Glossary	
Acronym	Meaning

3.4 Increase data re-use

The results of the project will be made available to promote access to the benefits of the FAIR project. In addition, an analysis of sensitive data will be carried out to avoid unexpected data leakage problems. Maximum efforts will be made by the project partners to exploit the results directly or indirectly for up to four years after the end of the project, during which time they may be re-used by third parties involved in the project. As far as the website is concerned, reports and scientific articles will be archived and accessible after the end of the project. In conclusion, social media accounts will reflect the end of the project.

4. DATA SECURITY

For all data, each partner will be responsible for ensuring that the data generated is regularly backed up and securely saved in accordance with internal preservation procedures. If these data are also internally shared within the consortium, the owner of the data will also be responsible for the methods used to share the information.

5. CONCLUSIONS

The DMP offers a comprehensive analysis of the data that will be generated, collected, shared, processed and/or stored within the WIDEX project. It provides a description of defined approaches

to ensure that the data is FAIR - findable, accessible, interoperable and reusable. It also includes a description of how the data will be preserved and made available after the end of the project. The DMP will be actively managed and regularly updated by TUKE to reflect the current status of the project.