

WASTE2H₂

WASTE TO HYDROGEN

Data Management Plan

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Abstract

The current deliverable is the first version of the Waste2H2 Data Management Plan. It outlines how various type of data created in respect to the project activities will be handled during and after the project, describing what data will be collected, processed or generated and whether and how this data will be shared and/or made open, and how it will be managed and preserved. This document will serve as a reference for all Wasre2H2 consortium partners in implementing the defined measures and activities to achieve the project objectives.

Document History

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14/06/2021	1	Paulo Brito (IPPortalegre)	First version of the document
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13/07/2021	4	Paulo Brito (IPPortalegre)	Final version of the document

Legal Disclaimer

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1. Data Summary

Waste2H2 is a Twinning action that has the overall objective of strengthen the capacity of the IPPortalegre team in the implementation of gas cleaning and conversion technologies for hydrogen production by taking advantage of the existent know-how in pilot equipment that already synthesis gases from different biomass waste materials and acquiring capacities and skills with the leading players in Europe H₂S and NH₃ in syngas production techniques. To achieve this goal Waste2H2 will carry a set of activities to raise the research profile of IPPortalegre, and potentiate the scientific, technologic and innovation capacity. Within the Twinning, IPPortalegre expects to amplify its network and collaborate with leading research institutions and create sustainable partnerships beyond this project.

The transfer of cutting-edge experimental and theoretical techniques will be done using already existing scientific data, in the process of exchange of scientific knowledge and data but also, but also, by carrying out some experimental activity within the scope of the various scientific missions that will take place during the execution of the project.

Thus, various type of data will be collected and/or created in the context of the project activities, such as:

- Data on project management and coordination - data about the project partners, data generated by the consortium meetings, reporting data related to project management.
- Data on project's twinning activities - pool of science related material that originates from the project's twinning activities, pool of material that originates from the meetings with policy makers and industrial stakeholders from industrial and institutions, reporting data generated by the twinning activities of the project.
- Data on workshops and summer schools for early-stage researchers
- Publishable scientific information resulting from the work developed during the internships.

The following table shows the typology of information collected and the processing that is intended to be given.

Type of activity	Task	Purpose
Project management		Data on project participants (mailing lists, etc.) - internal use only
Workshops and summer schools		Data collected on the participants attending the validation workshop will be limited to the required registration data (name, organisation, position,

		<p>experience with IA, etc.). Participants authorisation will be sought before listing</p> <p>publicly their names as attendees to the workshop. This information will be kept until the end of the project. Appropriate observation of European (EU General Data Protection Regulation 2016/679) and national data privacy regulations will be ensured. The workshop report will avoid attributing statements or opinions to individual participants;</p>
Reports, Scientific studies and Literature review	1.1; 2.1; 2.2	Literature review may include certain documents of a 'grey' (non-published) status (e.g. evaluations or impact assessment reports) collected from partners – use will be governed by the status of documents as communicated by owner

2. FAIR Data

FAIR data efforts will take into account data privacy requirements. In particular, personal data will be treated confidentially and in compliance with the EU General Data Protection Regulation 2016/679. Waste2H2 aims at generating FAIR data, i.e. data that is findable, accessible, interoperable and reusable.

2.1 Making data findable, including provisions for metadata

In order to make data findable, metadata will be used. All partners have agreed in providing relevant metadata and keywords, so that their data will be easily discoverable. Clear version numbers will be included (automated process through the project repository) and standard naming conventions will be defined.

On the other hand, research data will be deposited in a scientific data repository, **ZENODE**. To facilitate access to this data, a persistent identifier will be associated (DOI).

2.2 Making data openly accessible

The consortium partners already identified which data will be made openly available and which cannot be shared (or needs to be shared under restriction), including the reason why access is restricted in the latter case.

With open access, the aim is to reach a wider community. The fact of being assigned a DOI, allows access to the document. The using Metadata, and a language recognized by other systems integrated allows you to easily access the document.

To know the impact of public research, we must look at the statistics of access from the consultation and documents download.

2.3 Making data interoperable

Provisions are also taken to make data interoperable, making it easier to exchange and re-use them across research institutions, organisations, etc. The project strives in making all open data interoperable.

The ZENODO repository stores data and allows communication with other repositories and scientific databases on the WEB.

2.4 Increase data re-use (through clarifying licences)

The public content made available via the project website will be available for download and re-use with no restrictions or embargo.

Each record contains a minimum of required DataCite terms, along with terms recommended and optional for the same basis and enrichments in ZENODO. The (meta) data is disclosed under a Data Usage License that will be clear and accessible. License is one of the mandatory terms in ZENODO metadata. All data and metadata submitted are traceable to a registered ZENODO user. Metadata can optionally describe the original authors of the published work.

3. Allocation of resources

The costs for data collection and storage fall within the activities covered by the current grant. The responsibility for managing data underlying Waste2H2 activities will lie with the partners leading the work packages and the authors of the individual research studies or deliverables.

Zenodo is funded by the European Commission through the Open Aire projects, so does not bear costs associated with long-term storage and preservation of data deadline.

4. Data security

During the implementation of the Waste2H2 project the consortium members will collect data in various forms, e.g. pen and paper, photos, videos, electronic documents. For the purpose

of the project documentation this data will be stored individually by each partner. For this, the respective organisational rules and regulations of each partner with respect to data storage and security apply.

Personal contact data collected during the project activities will be kept internally within the Waste2H2 consortium. Storing of personal data will only occur with explicit prior informed consent of subjects. Each partner is responsible to ensure that those data are safely and securely stored, in full compliance with European Union data protection laws. Any collected personal data will be deleted from the project's data storage five years after the end of the project.

As far as ZENODO is concerned, its data centers are located on the premises of CERN and all access is restricted to a limited number of employees with appropriate training and who are granted access in accordance with their professional functions. Servers are managed in accordance with the CERN Security Base for Servers. CERN Security Team runs host-based intrusion detection systems and network and monitors traffic flow, pattern and content to and from CERN networks for detect attacks. All access to zenodo.org takes place over HTTPS, except for static documentation pages that are hosted on GitHub pages. ZENODO stores user passwords using strong cryptographic algorithms. User access tokens to GitHub and ORCID are stored encrypted and can only be decrypted with the application's secret key. CERN staff with access to user data operate according to strict security criteria, including, staff must not exchange acquired information with each other, unless it is expressly required for the performance of its functions. Access to user data must always be consistent with duties professionals and allowed only for problem solving, detection of security issues, resource monitoring and the like. Personnel are responsible for damages resulting from any infringement and may have access removed and/or be subject to disciplinary proceedings or depending on the seriousness of the infraction.

5. Ethical aspects

All Waste2H2 activities will be conducted according to national legal and ethical requirements of the countries they take place in, namely, Sweden, Germany, Italy, and Portugal. Furthermore, Waste2H2 will comply with Horizon 2020 (and 2030) ethical standards and guidelines and with the provisions of the General Data Protection Regulation 2016/679 for the collection and processing of personal data in meetings, communication, and dissemination activities.

The basics are:

- Honesty in collecting and processing scientific data;
- Transcription and careful analysis of scientific results to avoid errors;
- Independent analysis and interpretation of results based on data and not on influence from external sources;
- open sharing of methods, data and interpretations through publication and presentation;
- Sufficient validation of results through replication and peer collaboration;
- Moral obligations to society in general.