ConsenCUS

Data Management Plan

ConsenCUS-D1-4-DataManagementPlan-3.0-2404

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Version Control Sheet

WP	1. Project Management
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Table of contents

1 Summary

In this Data Management Plan we present the way of handling the data that will be generated and/or collected throughout the ConsenCUS project lifetime from May 1st, 2021 to April 30th, 2025. We will provide information on:

- the handling of research data during and after the end of the project,
- what data will be collected, processed and/or generated,
- which methodology and standards will be applied,
- whether data will be shared/made open access and
- how data will be curated and preserved (including after the end of the project).

This Data management Plan is part of the open access research data pilot (ORDP) scheme that is introduced by the European Commission to increase to impact of H2020 funding. The scheme makes all data generated throughout the project subject to open access by default. Nevertheless, selected datasets can be closed if necessary, by stating so in this Data Management Plan.

The ConsenCUS consortium is aware of and will make necessary efforts to follow the FAIR data management policy suggested by European Commission, meaning making data **f**indable, **a**ccessible, **i**nteroperable, and **r**eusable. The ConsenCUS (scientific) partners have already their own policies on data management and open access, and so experience in ORDP and FAIR principles of data management.

Data management will be a standardized agenda item in the Management Board meetings, to ensure the proper implementation. If necessary this document will be updated at each reporting period (M18: 30th October 2022, M36: 20th April 2024 and final reporting moment M48: 30th April 2025), or if significant changes occur.

M30 update

In this version ‘2.2’ of the Data Management Plan (DMP) we have updated several tables to indicate the publicly available data that has been produced in the ConsenCUS project. All public deliverables are published on our website, but also in the ConsenCUS community page in the open repository ZENODO. In ZENODO, we have uploaded even more documents, like conference posters and conference proceedings.

Next to the public deliverables, an overview of the published peer-reviewed articles is given. And there is an overview of other related publications (non-peer-reviewed) like policy letters, columns and open editorials that were published. In the table below we provide an overview of major changes/additions in this plan:

History of Changes V2.2 (M30)		
Page	**Change**	**Justification**
11	Added/filled table 3.1 with Scientific Publications	Shows up to date publications of the ConsenCUS project.
13	Added table 3.2 with Overview of ZENODO repository of ConsenCUS with publications and conference proceeding and/or posters.	Shows up to date dissemination of publications and conference proceedings
13	Added table 3.3 with other project related publications, non-peer reviewed, op-eds, columns.	Shows up to date dissemination of major steps in ConsenCUS project.
17	Added overview of the data repositories of publishing partners with their respective Data Management Policies	Shows the links and policies to the respective Data Management repositories of partners, where research data is stored.
18	Template is now advised, instead of required, as not to overlap with templates already in place.	To avoid double registration.
21	Underlying data of publications will be deposited in the creators own library/repository, instead of on Zenodo.	To avoid double registration

M36 Update

In this update we added new publications in the table. There were no other changes regarding the data management plan.

2 Introduction

The ConsenCUS project receives funding from the European Union's H2020 research and innovation programme under grant agreement nº: 101022484. This plan describes the initial Data Management Plan (DMP), as deliverable 1.4 in this project. It also has links with the POPD-requirement No.2 on the collection and use of personal data, as is described in deliverable 10.2.

The ConsenCUS project has two interesting perspectives:

1. *Technological Innovation data generation*. Research and data generation to improve CO_2 capture, conversion and storage techniques through scientific research and demonstration.
2. *Techno and Socio-economic data generation*. Research and data generation to improve the building of CO_2- value chains, to assess societal impact and create narratives for implementing ConsenCUS results.

Under 1 the challenge is to find a balance between Openness of data and Commercialization and Intellectual Property rights. We included a list of deliverables (and their underlying data sets) that are protected for public sharing (see table 2). Under 2 the challenges are more on the balance of Privacy and Personal Data Protection and Openness of data.

This DMP describes the way we implement the Data Management in the project, to ensure that we are compliant with the FAIR-principles set out by EU. Under art. 29.3 of the Grant Agreement, this project is also part of the Open Research Data pilot (ORDP). Datasets will therefore be open, unless stated otherwise (see table 2).

The DMP is intended to be a living document in which information can be made available on a finer level of granularity through updates as the implementation of the project progresses and when significant changes occur. The document has a clear version number and includes a timetable for updates. As a minimum, necessity of the DMP update will be reviewed in the context of the periodic evaluation/assessment of the project. Relevant situation and status updates shall be discussed during regular Management Board meetings. Under any circumstances, an update needs to be made in time for the final review at the latest.

2.1.1 List of data related WP's tasks/deliverables

Table 1 Overview of data relevant Work Package tasks within the ConsenCUS Project

No	Task name	WP	Responsible Partner	Foreseen Access
T1.1	Contractual, administrative and financial project management	WP1	Leader: RUG (supported by NEC)/all partners	Restricted
T1.2	Internal communication management	WP1	Leader: NEC/all partners	Restricted
T1.3	Quality and risk management	WP1	Leader: NEC/all partners	Restricted
T1.4	Knowledge management and other innovation-related activities	WP1	Leader NEC/ Part. WETSUS, COVAL	Restricted
T2.1	Optimisation of solvent composition to enhance gas-liq absorption kinetics and stability	WP2	Leader: HWU/Part. DTU, WETSUS, UCAL, ZJU	Restricted
T2.2	Optimization of capture unit under laboratory conditions	WP2	Leader: WETSUS/Part. COVAL, DTU, HWU, UCAL, ZJU	Restricted
T2.3	Process modelling, in silico optimisation of capture unit	WP2	Leader: HWU/Part. DTU, WETSUS, CERTH, SJTU	Restricted
T2.4	Design and engineering of demonstration units	WP2	Leader: DTU/ Part. HWU, WETSUS, ZJU, OMVPET, GM	Restricted
T3.1	Optimization of electrochemical reactor operating parameters	WP3	COVAL	Restricted
T3.2	Improving reactor operation stability	WP3	COVAL	Restricted
T3.3	Optimizing FA and PF purification	WP3	Leader: COVAL/part. WETSUS	Restricted

T3.4	Design and operation of a mobile demonstration and testing facility	WP3	Leader: COVAL/part. DTU, WETSUS	Restricted
T4.1	Mechanical properties of sealing rock in salt formations	WP4	Leader: BGS/ Part. GEUS	Public
T4.2	Initial numerical modelling of CO_2 storage in saline aquifers	WP4	Leader: GEUS/ Part. CERTH	Public
T4.3	Experimental study of processes or parameters critical for storage in saline aquifers	WP4	Leader: GEUS/ Part. BGS	Public
T4.4	Advanced numerical modelling of CO_2 storage in saline aquifers	WP4	GEUS	Public
T4.5	Risk and safety assessment - Development of monitoring program for the CO_2 storage in saline aquifers	WP4	Leader: GEUS/ Part. BGS	Public
T5.1	Permits	WP5	Leader: DTU/Part. AALPOR; OMVET; GM; COVAL; WETSUS	Public
T5.2	Definition of technology interfaces	WP5	Leader: DTU/Part. AALPOR; OMVPET; GM; COVAL; WETSUS	Restricted
T5.4	Design and construction of carbon capture container	WP5	Leader: DTU/Part. WETSUS; COVAL; AALPOR; OMVPET; GM	Restricted
T5.6	Definition of demonstration cycles	WP5	Leader: DTU/Part. All WP5	Public
T5.7	Demonstration cycle at AALPOR, Denmark	WP5	Leader: DTU/Part. AALPOR, COVAL and WETSUS	Public
T5.8	Demonstration cycle at OMVPET, Romania	WP5	Leader: DTU/Part. OMVPET, COVAL and WETSUS	Public

T5.9	Demonstration cycle at GM, Greece	WP5	Leader: DTU/Part. GM, CERTH, COVAL and WETSUS	Public
T5.10	Data analysis	WP5	Leader: DTU/Part. COVAL and WETSUS	Public
T6.1	Technoeconomic assessment of CCUS in cement plants	WP6	Leader: CERTH/ Part., HWU, AALPOR, WETSUS, COVAL	Public
T6.2	Technoeconomic assessment of CCUS in magnesia plants	WP6	Leader: CERTH/ Part. GM, WETSUS, COVAL	Public
T6.3	Technoeconomic assessment of CCUS in integrated oil refineries	WP6	Leader: HWU/ Part. CERTH, DTU, OGTC, OMVPET, WETSUS, COVAL	Public
T6.4	Business plans and investment de-risking	WP6	Leader WETSUS/ Part. CERTH, GM, OGTC, AALPOR, COVAL, OMVPET, SJTU	Restricted
T7.1	Life Cycle Assessment	WP7	Leader: CERTH / Part. HWU, COVAL, GM	Public
T7.2	Monitoring strategic narratives	WP7	Leader: EPG/Part. CERTH, RGU	Public
T7.3	Qualitative evaluation of community awareness and acceptance	WP7	Leader: RGU/Part. CERTH, EPG	Public
T7.4	Synthesis and dissemination of findings	WP7	Leader: RGU/Part. EPG, CERTH, NEC	Public
T8.1	CO_2 push market analysis	WP8	Leader: RUG / Part. CERTH, DGC, HWU	Public
T8.2	CO_2 pull market analysis	WP8	Leader: DGC/Part. RUG, HWU, COVAL, CERTH	Public
T8.3	CCUS chain component model development	WP8	Leader: HWU/Part. RUG, CERTH, OGTC, WETSUS, COVAL	Public
T8.4	Value Chain Optimization of European CO_2 Clusters and sector coupling	WP8	Leader: RUG/Part. HWU	Public

T8.5	Safety of logistics	WP8	Leader: DGC/Part. RUG	Public
T9.1	Online information platform, communication plan and coordination	WP9	Leader: NEC/ Part. all partners	Public
T9.2	Dissemination at demonstration sites	WP9	Leader: DTU/ Part. NEC, AP, GM, OMVPET	Public
T9.3	Policy advice	WP9	Leader: EPG/ Part. NEC	Public
T9.4	Education and training	WP9	Leader: NEC/ Part. all partners	Public
T9.5	Exploitation Plan	WP9	Leader: NEC	Public

2.1.2 **Protected Data**

According to Grant Agreement article 27, results can be protected if:

A) The results can reasonably expected to be commercially or industrially exploited, and

B) Protecting them is possible, reasonable and justified.

The ConsenCUS consortium considers the documents, products and data related to the list of Deliverables in table 2 as protected data. Therefore, this data will not be openly accessible via the chosen platform and in the description of the data set the terms and conditions of the extend and duration of the restricted access is included.

Table 2 Overview of data related Work Package deliverables within the ConsenCUS project with restricted access rights

No	Deliverable name	WP	Responsible Partner	Foreseen Access
D1.1	Initial Risk Management Plan	WP1	NEC	Restricted
D1.2	Final Risk Management Plan	WP1	NEC	Restricted
D1.3	Project Management Handbook	WP1	NEC	Restricted
D2.1	Report on selection of final composition of alkaline solution for CO_2 capture at demonstration scale	WP2	HWU	Restricted

D2.2	Report on system performance under controlled laboratory conditions	WP2	WETSUS	Restricted
D2.3	Validated and documented process simulator	WP2	HWU	Restricted
D2.4	Final CO_2 capture demonstration plant design and P&ID	WP2	DTU	Restricted
D3.1	Report describing results from the optimized electrochemical reactor setup	WP3	COVAL	Restricted
D3.2	Report on the longterm integrated test at an industrially-relevant environment	WP3	COVAL	Restricted
D3.3	Report describing results from FA and PF purification tests	WP3	COVAL	Restricted
D5.2	Technical document with the specification of the interfaces	WP5	DTU	Restricted
D6.4	Report on business plans	WP6	WETSUS	Restricted
D10.1	H - Requirement No. 1	WP10	RUG	Restricted
D10.2	POPD - Requirement No. 2	WP10	RUG	Restricted
D10.3	NEC - Requirement No. 3	WP10	RUG	Restricted

2.1.3 **List of peer-reviewed scientific publications**

This table will be filled when the project is progressing and scientific publications are published. We use a template (table 4) to gather the necessary information on these datasets. Furthermore, the datasets and the published articles will be placed in the ConsenCUS community in the ZENODO repository and the creators own repository/library (see 3.1.4).

Table 3.1: Scientific Publications and conference proceedings in the ConsenCUS-project

No	Publication title	Corresponding Author/Partner	DOI	Journal	Year
1	Community acceptance and social impacts of carbon capture, utilization and storage projects: A Systematic meta-narrative review.	RGU: Jacob Nielsen e.a. (2022)	https://doi.org/10.1371/journal.pone.0272409	PLoS ONE	2022
2	Conference publication GHG-T 16: Extended abstract: The ConsenCUS Project: Carbon Neutral clusters by Electricity-based Innovations in Capture, Utilisation and Storage	DTU (+ others): Uffe Ditlev Bihlet e.a. 2022	https://doi.org/10.2139/ssrn.4297064	Conference proceedings	Dec 2022
3	Conference abstract TCCS-12: Absorption based CO2 capture using KOH solution coupled with electrochemical regeneration cell: process model development.	CERTH	https://doi.org/10.5281/zenodo.10030983	Conference proceedings	June 2023
4	Conference proceedings TCCS-12	WETSUS (abstract will be uploaded when publication of full article is avaialble		Conference proceedings	June 2023
5	The ConsenCUS Project: Carbon Neutral clusters by Electricity-based Innovations in Capture, Utilisation and Storage | Earthdoc	BGS	https://doi.org/10.3997/2214-4609.2023101209	Conference proceedings	Jun 2023

6	Oxidative degradation of Piperazine (PZ) in aqueous KOH/K2CO3 solutions	HWU	https://doi.org/10.1016/j.jece.2023.111228	Journal of Environmental Chemical Engineering	October 2023
7	Assessing rock physics and seismic characteristics of the Gassum Formation in the Stenlille aquifer gas storage – A reservoir analog for the Havnsø CO storage prospect, Denmark	GEUS	https://doi.org/10.1016/j.ijggc.2022.103583	International Journal of GreenhouseGas control	January 2022
8	Improved delineation of the Gassum Formation reservoir zones using seismic impedance inversions: implications for exploiting the Stenlille aquifer gas storage facility as a CO2 storage demonstration site, onshore Denmark	GEUS	https://doi.org/10.1144/geoenergy2022-002	Geoenergy	July 2023
9	Efficiency of temporary CO2 storage in saline aquifers.	GEUS	https://doi.org/10.5281/zenodo.8333446	Poster GET 2022	
10	The ConsenCUS project: Carbon Neutral clusters by Electricity based innuvations in CCUS	GEUS	https://doi.org/10.5281/zenodo.8333446	Poster CO2-Geonet ‘23	
11	Public perception and acceptance of CCUS: preliminary findings of a	RGU	10.12688/openreseurope.16663.1	Crossref	Nov 2023

	qualitative case study in Greece				
12	Optimizing Alkaline solvent regeneration through bipolar membrane electrodialysis for carbon capture	WETSUS	http://dx.doi.org/10.1016/j.cej.2024.150870	Chemical engineering journal	2024

Table 3.2 – Project deliverables, shared through ZENODO

No	**Publication title**	**Corresponding Author**	**DOI**
1	D4.1- review on the mechanical behaviour of rock salt in gas storage conditions	BGS	10.5281/zenodo.5946816
2	D4.2: Report with the selection of temporary storage strategy and description of uncertain parameters	GEUS	https://zenodo.org/badge/DOI/10.5281/zenodo.8321358.svg
3	D4.3: Experimental results to constrain the uncertainties of critical i) parameters or ii) impact of processes	GEUS	https://zenodo.org/badge/DOI/10.5281/zenodo.8321438.svg
4	D8.1: CO2 Push Market analysis	RUG	https://zenodo.org/badge/DOI/10.5281/zenodo.8321657.svg
5	D8.2: CO2 Pull Market analysis	DGC/RUG	https://zenodo.org/badge/DOI/10.5281/zenodo.8321712.svg
6	D9.7: Carbon Capture, Utilisation and Storage: challenges and policy recommendations from the COnsenCUS project.	EPG	https://zenodo.org/badge/DOI/10.5281/zenodo.8321771.svg

Table 3.3 – Project related publications, non-peer-reviewed, op-eds, columns.

No	Publication title	Corresponding Author	Type	Publication	Year
1	Stories of Carbon capture, utilization and storage – dubbed in Romanian	EPG	Popularised publication	Website of partner:	2022
2	Communities can close a knowledge gap on decarbonisation effects	RGU	Op-ed in newspaper	Scotsman: link	2022
4.	Press release new Demonstration Plant at AALPOR	AALPOR	Press Release	Aalborg Portland etablerer nyt pilotanlæg til CO2-fangst: Kan reducere energiforbruget ved CCUS markant og sikre bedre udnyttelse af CO2 - Aalborg Portland	2023

3 Data summary

3.1.1 Purpose of the data Generation and Collection

The purpose of the data generation and collection in the ConsenCUS project is to achieve the objectives of the project:

- to present technological innovation in the 3 main components of CCUS
    - (1) Carbon capture based on Alkali absorption, coupled to a novel electrochemical regeneration step (target: 100 kg CO_2/h),
    - (2) conversion of CO_2 to formate for the current market, as well as emerging markets and
    - (3) safe cyclic loading of CO_2 into salt formations and aquifers for storage.
- Life-cycle analysis and techno-economic evaluations will address how the innovations can be exploited, optimizing environmental benefits while providing sound business cases for the three participating sectors and beyond.

The capture and conversion routes are unique in taking only electricity and water as consumables, while providing energy- and cost-efficiency beyond the current industrial standards (targets: TRL 6-7, 1.4 GJ and € 34 per Tonne CO_2). *The demonstrator and reports on this novel techniques are confidential, only for members of the consortium including the Commissions services, because of the planned commercial and industrial exploitation. The outcomes and performance of the demonstrator needs broad distribution for creating impact.*

ConsenCUS also designs so-called CO_2-clusters and networks in NW and SE Europe, around our demonstration sites. The ConsenCUS partners are spread across the CO_2-value chain and will optimize such clusters based on an interconnected network of emitters fitted with the developed carbon capture and utilisation technology. Importantly, the project will create narratives to promote CCUS at communities surrounding these cluster components, by clarifying the social and environmental impact to locals, raising awareness alongside investigating their critical needs. *The reports on this are mostly public, because engaging the communities directly surrounding the demonstration sites and beyond is crucial.*

3.1.2 **Data generation and collection**

The Annex 1A of the Grant Agreement and tables 1-3 (above) give an overview of all the deliverables, the lead beneficiary, type of product (report, demonstrator, other) and the dissemination level (public or confidential). A total of 52 deliverables is planned throughout the course of the project, of which 35 are public reports. Numerous datasets will be created, processed and analysed.

Given the broad scope and interdisciplinarity of the project, a wide range of types and formats of data will be collected and generated along the execution of the project, including but not limited to:

- Quantitative
    - Laboratory tests reports
    - Simulation models results
    - Techno-economic analysis of case studies
    - Database of CO_2 production, storage and utilization sites

- Qualitative
    - Evaluation of community awareness and acceptance
    - Cluster analysis and sector coupling
    - Safety reports

We expect that most of the data collected and generated without any sensitive nature will be stored using open formats, or at least, formats that can be accessed by others without significant expense. Sensitive raw data generated by the partners will only be stored locally on their respective servers. For distribution within the ConsenCUS consortium, the Unishare platform that is password-protected shall be used. Only information that have been generated from such raw data and that has no identifiable attributes can be shared more openly. For internal sharing of sensitive data, we will use pseudonymisation as protection means of individuals. In addition, given the wide range of software tools that the project uses, open sharing may not always be possible.

Once the raw data has been analyzed and processed into information, it will be grouped and compiled into scientific reports for further dissemination on a societal level through selected online repositories (for more details refer to Sub-clause 3.1.2.3 of present document).

Prior to completion of a task or deliverable, it is each consortium partners own responsibility to ensure proper handling of their data. Therefore, each partner should manage their data using proper documentation and storage (long and short term) following their own / internal data management plan.

For the academic partners in the project a separate DMP is regulated for each PhD student connected to ConsenCUS, and storage of data in own repositories.

Academic Partner	Used Repository	Corresponding Policy
RUG	DataverseNL DataverseNL	*Data related to publications and data that is suitable for re-use will be deposited in DataverseNL. This is a repository with servers managed by the participating Dutch Universities, supervised by DANS.*
WETSUS	4TU.ResearchData	
Heriot Watt University	PURE. Pure support - Heriot-Watt University (hw.ac.uk)	There is a specific DMP created. This is available for reference.
Robert Gordon University	OpenAIR@RGU Home (worktribe.com)	Research Data Management Policy.pdf
Danmarks Tekniske Universitet	https://data.dtu.dk/	DTU's Research Data Management Policy - References
GEUS;	https://dataverse.geus.dk/	https://dataverse.org/best-practices/data-management
BGS;	National Geoscience Data Centre - British Geological Survey (bgs.ac.uk)	Included in this website
University of Calgary	Tba	
Shanghai Jiao Tong University	Tba	
Zhejiang University	Tba	

3.1.3 **Record of dataset**

After the completion of a task or deliverable, a record of the dataset underlying this task/ deliverable will be created for indexing and uploading the dataset to suitable repository. Table 4 shows the template for the dataset record to allow storage and reuse. This is advised to be used by the partners, if such is not already in place in its own data management policies.

Table 4 Template "Record of dataset".

Work Package	**Which WP is this dataset related to?**
Deliverable name	Which Deliverable is this dataset related to?
Data Set name	**The name of the dataset should be easily to search and find**
Dataset description	A brief description of the dataset
Responsible partners	An overview of the lead beneficiary and involved consortium partners.
Author(s) & Affiliations	Identify the main author(s) (required for upload to Zenodo) or alternatively task leader
Purpose	The purpose of the data collection/generation and its relations to the objectives of the project
Type	Types of data could be report, paper, interview, expert or organization contact details, video, audio, presentation, or note
Format	Name the data formats which are included in the dataset: i.e., CSV, TXT, XLSX, DOC, PDF, PPT, JPEG, OPJ, TIFF, …
Overview files	Name(s) and size(s) of the file(s) contained in the dataset.
Source	The origin of the data
IPR-owner	Which project participant(s) own the intellectual property right (IPR)
Re-use existing Data	Identification if any existing data being reused and how they are used
Benificiary(ies)	To whom the data may be useful
Key words	The keywords associated with the dataset to make it easier to search and find
Version number	To keep track of changes to the dataset
Date	date of the dataset was completed (this document finalized)
Access	Open / Public Access - includes none confidential data Embargo Access - temporarily restricted access Closed Access - Consortium members only

	Restricted Access - Consortium + access to be granted upon request and granted by {governing body in project}

3.1.4 Dataset and deliverable storage

A dedicated ConsenCUS public repository will be created on Zenodo and will be regularly kept updated by the project coordinator. Necessity for the updates will be reviewed at least every 6 months after each General Assembly meeting. To group the data at Zenodo a ConsenCUS tag will be used. The platform has been chosen for the following reasons:

- it adheres to FAIR Principles (for more details refer to Section 4 of this document)
- it is a widely-used and well-known platform for interdisciplinary data which suits the interdisciplinary research project like ConsenCUS
- it allows to publish all ConsenCUS data on a central location
- it allows grouping data by providing tags and / or an ConsenCUS-community
- it provides long term infrastructure and digital object identifiers (DOIs)
- it is integrated in the reporting line of European Commission by OpenAIRE
- It gives opportunity to segregate shared data by different access modes (open, restricted, or closed)

For FAQs or advice on how to use the platform, please visit the help section of the website.

The ConsenCUS community can be approached with this URL:
https://zenodo.org/communities/consencus/

3.1.5 Access to datasets and deliverable during and after the project

The datasets relating to deliverables will be stored at ZENODO and access to these datasets will guaranteed by using four level of access.

- **Open / Public Access** - includes none confidential data

- **Embargo Access** - temporarily restricted access
- **Closed Access** - Consortium members only
- **Restricted Access** - Consortium + access to be granted upon request and granted by {governing body in project}

The “responsible partner” (owner of the data and uploader on ZENODO) will continue to manage the dataset after the project ends (change of rights, end of restricted access period, etc.)

4 FAIR Data

4.1.1 Commitment to FAIR Principles

The ConsenCUS project aims to follow the FAIR Data principles as laid out by FORCE11 (https://www.force11.org/group/fairgroup/fairprinciples):

To be Findable:
F1. (meta)data are assigned a globally unique and eternally persistent identifier.
F2. data are described with rich metadata.
F3. (meta)data are registered or indexed in a searchable resource.
F4. metadata specify the data identifier.

TO BE ACCESSIBLE:
A1 (meta)data are retrievable by their identifier using a standardized communications protocol.
A1.1 the protocol is open, free, and universally implementable.
A1.2 the protocol allows for an authentication and authorization procedure, where necessary.
A2 metadata are accessible, even when the data are no longer available.

TO BE INTEROPERABLE:
I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
I2. (meta)data use vocabularies that follow FAIR principles.
I3. (meta)data include qualified references to other (meta)data.

TO BE RE-USABLE:

R1. meta(data) have a plurality of accurate and relevant attributes.

R1.1. (meta)data are released with a clear and accessible data usage license.

R1.2. (meta)data are associated with their provenance.

R1.3. (meta)data meet domain-relevant community standards.

Therefore, the consortium will deposit all deliverables and the underlying dataset on Zenodo and make these openly available whenever possible. Sensitive and none public data(sets) will be deposited in Zenodo with either closed or restricted access.

We use the naming convention, as described in our Handbook (D1.3 Project Management Handbook).

Deliverables should follow the below naming convention, separated by dashes:

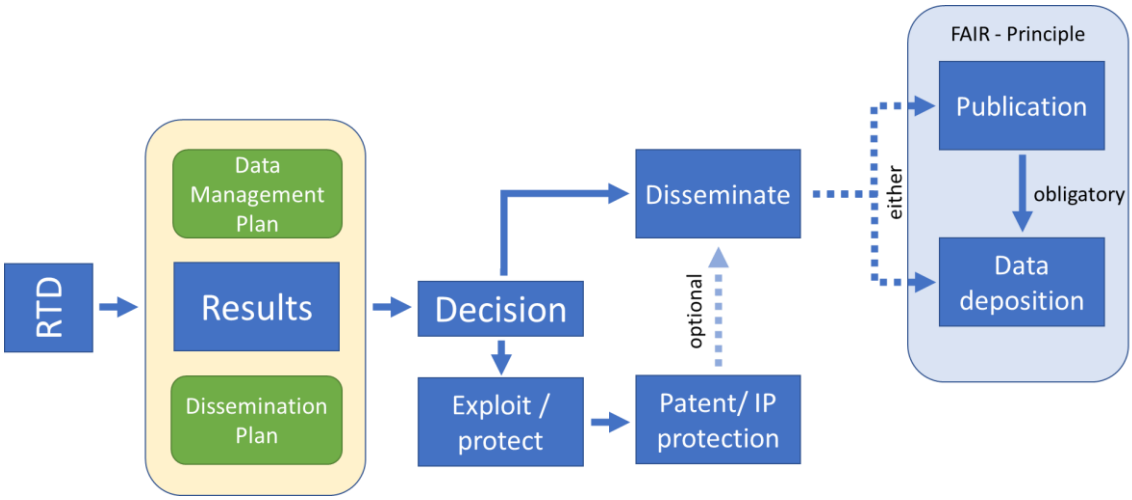
- Project name (ConsenCUS-)
- Deliverable ID (e.g. D1-4-)
- Deliverable title with capitalized initials (e.g. DataManagementPlan-)
- Version number and date YYMM (e.g. 0-1-2106). Recommended versioning is reaching 1.0 when reaching a complete version that is shared outside the original authors.
- If finalized and accepted by CINEA, append FINAL

A complete example: ConsenCUS-D1-4-DataManagementPlan-0-1-2106

4.1.2 **Publication and Data deposition**

All scientific publications will be deposited in the Zenodo repository (https://zenodo.org/) and grouped in public accessible community (ConsenCUS) with a suitable Open Access license (i.e.: CC-BY-(ND)-(NC)). The project coordinator (New Energy Coalition) will be the curator of this repository. The underlying data will be deposited in the creators own libraries/repositories according their own data management policies.

It is the responsibility of the corresponding author(s) to ensure that their peer-reviewed scientific article is published with a suitable Open Access license. Furthermore, the corresponding author is responsible to prepare the underlying (research) data of their publication for deposition on their own repository according to the FAIR principles.



5 Allocation of Resources

There will be no project costs associated with the process of publishing reports via Zenodo, except the researcher time spent for manual-, documentation- and metadata-creation. These resources are covered by the project budget at the institutional and research costs of the H2020.

Due to multidisciplinary nature of the project overall and specifics of each individual work package, the responsibility for the data management is split between the partners. The work package leaders will be responsible for the implementation of data management plan with regard to the deliverables and tasks within their own work package. The overall coordination of the data management will be done by NEC within the framework of work package 1.

6 Data Security

For the information published under open access rights, data security issues do not apply. Regarding the backup of publications, data published on Zenodo shall be backed-up on servers

of the responsible partner. By choosing Zenodo with additional internal backup long term preservation, monitoring and curation is ensured through the IT department of each institution.

Sensitive raw data stored on a partner-level shall be secured and backed up regularly by the IT department of the respective organization. In case that such data needs to be shared across partners within the project, individual arrangement based on existing infrastructure will be made.

7 Ethical Aspects

Details on management of Personal Data throughout the project and imported/exported materials used for implementation of tasks can be found in deliverables D10.2 and D10.3 respectively.