



## *D6.4 'Data Management Plan'*

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## List of terms and abbreviations used

Abbreviation / Term	Description
CA	Consortium Agreement
DMP	Data Management Plan
DOI	Digital Object Identifier
EU/EC	European Union/ European Commission
FAIR	Findable, Accessible, Interoperable & Reusable
FFG	Forschungs Foerderungs Gesellschaft
FuelSOME	Multifuel SOFC system with Maritime Energy vectors
GA	Grant Agreement
GDPR	General Data Protection Regulation
IMO	International Maritime Organisation
IP	Intellectual Property
IPR	Intellectual Property Rights
IT	Information Technology
LCSA	Life Cycle and Sustainability Analysis
MS Excel	Microsoft Excel
OEM	Original Equipment Manufacturer
PC	Project Coordinator
PhD	Doctor of Philosophy
QA	Quality Assurance
QC	Quality Control
SOC	Solid Oxide Cell
SOFC	Solid Oxide Fuel Cell
TEA	Techno Economic Analysis
TLS	Transport Layer Security
TRL	Technology Readiness Level
WP	Work Package
DPO	Data Protection Officer

# 1. Executive Summary

The Data Management Plan (DMP) is a living document which outlines how the data within the FuelSOME project will be managed to make it findable, accessible, interoperable, and reusable. D6.4 is addressing WP6 'Project Management' and the work under Task 6.4 'IPR, Innovation & data management'.

This document includes information covering all the areas below:

- The **guiding principles** for data management in general within the project
- The **legal framework** constituted by the General Data Protection Directive (GDPR)
- **Data Summary:** Overview of what data will be generated, gathered, and processed during the course of the project (including, where applicable, personal data)
- **Data storage:** How data will be stored and processed according to the Findable, Accessible, Interoperable and Reusable (FAIR) Data Management principles.
- **Metadata:** Why Metadata is important and how Metadata will be made available from different activities in the project.
- **Data Security:** How the Consortium intends to keep the data secure and how it can be shared with the public.

The project runs for a total duration of 48 months and during this period, the data generated must be handled in a responsible and useful manner and this is exactly the intention of the DMP. To facilitate data exchange, a SharePoint (called AVL Extranet) has already been created and this provides for a safe and secure access to all project participants. Secure access is ensured by a two-factor authentication preceded by the registration process on [www.avl.com](http://www.avl.com). Data security is taken seriously and there are measures in place (if needed) to cordon off certain areas of the SharePoint in case sensitive information is to be stored or shared. Also, access to the SharePoint is given only to personnel from partners who are working on specific tasks within the project. All other public data will be available to all participants.

It is the intention of the project to maximize its impact by sharing information as much as possible publicly. In this regard, all scientific publications will be made open access and except for any sensitive information, all other information will be disseminated or published in an open access platform.

The DMP currently is in its first version, and it is intended to provide maximum clarity and information to all relevant stakeholders and partners. Subsequent adjustments and refinements will be made prior to the first and second reporting periods *viz.* M18 & M36 and will also be updated at the end of the project (M48) according to the Grant Agreement (GA), to reflect the actual research data generated during the project and include updated instructions on how access to open data was managed.



## 2. Introduction

The FuelSOME project's vision is to find a scalable and flexible path for supply of multi-fuels *viz.* ammonia and methanol besides hydrogen, to act as key contenders in replacing marine diesel as fuel for ocean going vessels, coupled with their use in a multi-fuel energy generation system using Solid Oxide Fuel Cell (SOFC) technology. A number of tasks under respective work packages (WPs) will be carried out to strive for achieving the vision. It is envisaged that a vast amount of data will be generated as a result of all the project activities and this needs to be managed, stored, and shared in a responsible manner.

This report lays out all necessary content in respective sections for laying the framework for responsible data management. It describes in detail the practical data management procedures implemented by the FuelSOME Consortium. It is the intent to make existing data available for the broader research community, relevant stakeholders, and policy makers. All beneficiaries (Consortium Partners) and parties shall provide access to scientific information that is reusable and free of charge.

Data from the project is meant not only for scientific advancement but also for involving the European citizens and society and embrace open access for all end users. The FuelSOME DMP is a living document which outlines how the data within the FuelSOME project will be managed to make it findable, accessible, interoperable, and reusable. D6.4 is addressing WP 6 'Project Management' and the work under Task 6.4 'IPR, Innovation & data management'.

### 2.1 Mapping Project's Outputs

The purpose of this section is to map FuelSOME GA commitments, both within the formal Deliverable and Task description against the project's respective outputs and work performed.

Table 1: Adherence to FuelSOME GA deliverable and task description

FuelSOME Task		Respective Document Section(s)	Justification
Task 6.4 'IPR, Innovation & data management'	T6.4 will prepare and monitor the implementation of the Data Management Plan (DMP). The DMP will contain information related to the types of data the project will generate / collect (including personal data), the data standards to be used and how partners might exploit the data, thus setting robust procedures and supporting GDPR compliance. AVL will also identify and manage innovation from the project, advising partners on the scope and potential of the innovations arising and paying attention to discerning IPR at regular checkpoints. To ensure sustainability, exploitation of the project's results, AVL designs the IPR protection strategy and manages associated activities with partners. AVL also ensures that confidentiality agreements and all the partners' foreground and background IP in the Consortium Agreement (CA) are respected.	Section 2,  Section 3,  Section 4,	<b>Section 2</b> mainly provides administrative and responsibility information with respect to data management.  <b>Section 3</b> talks about data management specific to the project and how metadata needs to be handled and also IPR & innovation.  <b>Section 4</b> provides information on data archiving, storage and preservation which is critical as the project progresses.

		Section 5,	<b>Section 5</b> talks about data security, legal and ethical aspects which are also crucial when vast amounts of data are to be handled.
<b>FuelSOME Deliverable</b>			
D6.4 'Data Management Plan'			
The data generated from several tasks from different work packages needs to be managed in a responsible manner. A detailed report on how this vast amount of data will be handled is described in this report.			

## 2.2 Deliverable overview and structure

The deliverable is organised in the following structure:

**Section 2** provides administrative information, roles and responsibilities for all involved project partners and resource information for storing and maintaining data.

**Section 3** is about the project's DMP in general, with focussed sections on:

- i) Data Summary,
- ii) Data acquisition formats,
- iii) Data overview per WP,
- iv) How to handle generated research data,
- v) Creation of Metadata,
- vi) IPR involved. The IPR will be handled according to the text provided here and as per details given in the Consortium Agreement (CA).

**Section 4** provides information on:

- i) Data archiving and preservation,
- ii) Data storage aspects during research progress and
- iii) Data sharing and dissemination during and after project phase.

This lays down protocols in place for data storage.

**Section 5** deals with data ethics and security within which topics on ethics involved with personal data collection, informed consent procedures, legal and ethical aspects involving data, and data security is touched upon.

**Section 6** provides a summary of the entire report.

## 2.3 Administrative information

The project FuelSOME under GA #101069828 is coordinated by AVL List GmbH with the main Project Coordinator (PC) being Vikrant Venkataraman and co-PCs being Thomas Hirschberger and Johannes Lackner. Their respective contact information is as follows:

- Vikrant Venkataraman – [vikrant.venkataraman@avl.com](mailto:vikrant.venkataraman@avl.com)
- Thomas Hirschberger – [thomas.hirschberger@avl.com](mailto:thomas.hirschberger@avl.com)

- Johannes Lackner – [johannes.lackner@avl.com](mailto:johannes.lackner@avl.com)

All project related data on a high level will be managed by AVL.

For any dissemination, communication, and exploitation, eBOS Technologies has the lead. The data for social medial channels will be managed by eBOS after consultation with the PC. The respective contact from eBOS Technologies is as follows:

- Gianna Avgousti – [giannaa@ebos.com.cy](mailto:giannaa@ebos.com.cy)
- Christos Skoufis – [christoss@ebos.com.cy](mailto:christoss@ebos.com.cy)

Any changes to the above contacts will be communicated and revised in the next version of the DMP.

## 2.4 Data management, responsibilities & resources

All data generated within the project, will be managed responsibly by AVL List GmbH and all information will be available for use by the project partners, subject to terms and conditions mentioned in the CA. AVL has set up a SharePoint called AVL Extranet via which all partners can collaborate and share data. The current storage space on the SharePoint is 50 GB and this can be increased further when needed.

**Key personnel in the project** – the PC Vikrant Venkataraman and co-PCs Thomas Hirschberger and Johannes Lackner will act as data managers during the timeline of the project and will be responsible for documenting and managing the data during this period.

Additionally, the main leads from every partner will be responsible for the following:

- Data management at their respective organisations/institutes.
- Data transmission from their respective organisations/institutes to the SharePoint.
- Ensuring no sensitive data flows out beyond the personnel working on the project.
- Ensuring no data is made public prior to joint consultation with the Consortium.
- Reporting to the PC in case they come across any issues related to data management and security.

The list of main leads from the partners is mentioned in Table 2.

*Table 2: List of people responsible for data management*

Partner	Lead	Substitute Lead
AVL	Vikrant Venkataraman	Thomas Hirschberger
AEE	Wolfgang Gruber-Glatzl	Jana Reiter
ATENA	Viviana Cigolotti	Simona Di Micco & Mariagiovanna Minutilo
VTT	Santeri Saxelin	Himanen Olli
ZHAW	Mathias Stucki	Rene Itten
EBOS	Gianna Avgousti	Christos Skoufis
Elcogen	Antonio Alfano	Julius Stenius
WUT	Molga Eugeniusz	Michael Lewak

Note: Any changes to the above table will be incorporated in subsequent versions of the DMP.

Every partner must ensure that data used during the project, for WPs, for tasks, for sub tasks and any other purpose is stored and made available later. This might be needed either for scientific publications or post project dissemination or for creating metadata, all of which might happen after the project has

ended. The respective lead or substitute lead from every partner must also ensure that all data generated at their premises is stored in a safe and secure manner and minimise the chances for data loss. Further detailed responsibilities are mentioned in Table 3.

Table 3: List of tasks in data management

<b>Tasks</b>	<b>Partner(s) involved</b>	<b>Personnel from respective partners</b>
Data collection	All partners	Laboratory staff, Researchers, Scientists
Data entry	All partners	Laboratory staff, Researchers, Scientists
QA/QC	eBOS	Lead from eBOS
Metadata creation	All partners	Laboratory staff, Researchers, Scientists
Metadata management	All partners	Lead from respective partner
Data back up on SharePoint	AVL	Project coordinator, IT department
Data back up on local servers & local data management	All partners	Lead from respective partner, IT department from respective partner
Archiving, Data Security	AVL	IT department
Systems administration, Oversee research	AVL	Project Coordinator
Data dissemination	AVL, eBOS	Project Coordinator, Dissemination lead
Data preparation for dissemination	All partners	Lead from respective partners
Data transmission from local servers to SharePoint	All partners	Lead from respective partner

Resources needed for the SharePoint and data management on the SharePoint will be covered by the project management budget in the proposal and internally by the IT department at AVL. At this point of time, no additional costs are foreseen for the activities listed out in the project and later version of the DMP may identify the extra costs needed to store and maintain data.

The DMP is a living document, with the first version being published in February 2023 (M6) of the project while Figure 1 below demonstrates the evolution of the document through the project's lifetime.

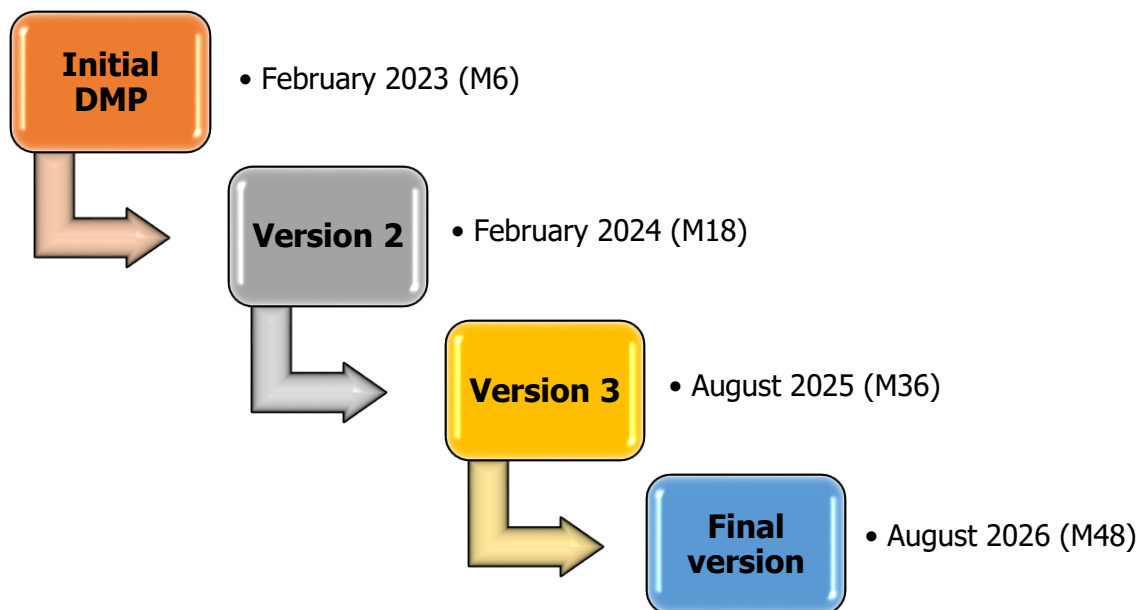


Figure 1: Graphic showing evolution of DMP over the course of the project

## 3. Data Management Plan

This section considers the data storage locations on the SharePoint, the data acquisition means, the formats in which data will be collected, the data overview foreseen with respect to each WP, how data will be managed according to FAIR principles and what measures will be in place for Metadata creation. These are organised in separate sub-sections in order to make it clear to the reader.

### 3.1 Data summary

Over 300 GB of data is expected to be generated during the course of the project and this vast amount of data needs to be managed in a responsible manner. The exact amount of data will be evaluated at the end of each reporting period. Not all data will be stored on the SharePoint, thus the initial 50 GB storage space is deemed to be sufficient but can be expanded at any time. This is because some data may be sensitive to certain partners.

The data arising or contributing from/to a respective WP must be stored under the WP sub-area on the SharePoint. It is the responsibility of the WP leader to ensure that the corresponding WP on the SharePoint is maintained with regards to data management. The leads from respective partners who are not WP leaders must also actively contribute to the data in respective WP's they are involved in by cooperating closely with the WP leader.

For example, data from WP3 will be directly stored under 'WP3' sub-area on the SharePoint. This will enable all partners involved in WP3 to easily access the data.

Figure 2 shows a screenshot of the SharePoint and where the WP relevant data needs to be stored.

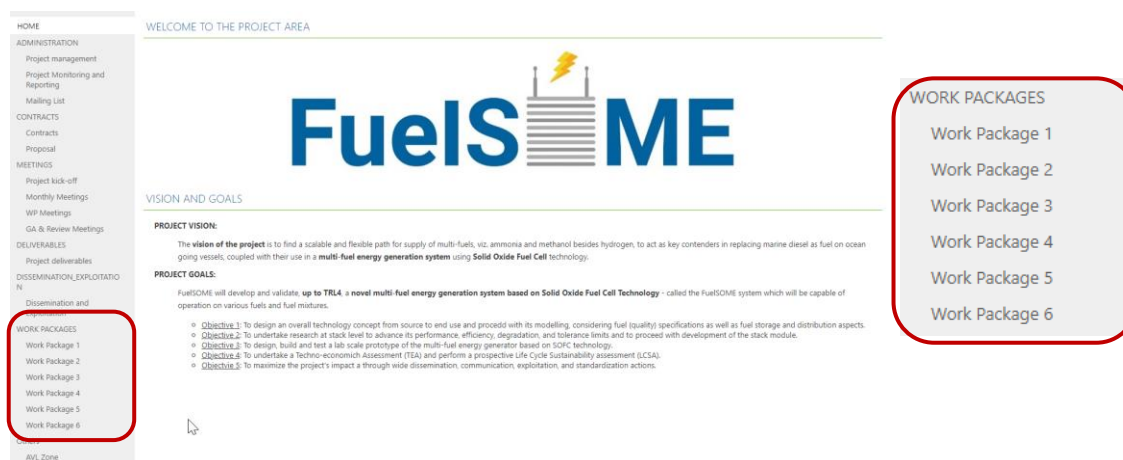


Figure 2: Screenshot of SharePoint – storage location of respective WP data

There is a data storage tracker on the top right of the SharePoint which indicates the storage capacity of the SharePoint. The PC will take necessary steps to increase the storage when the tracker gets closer to the assigned current level. Figure 3 shows a screenshot of the SharePoint and where the data storage tracker is located.

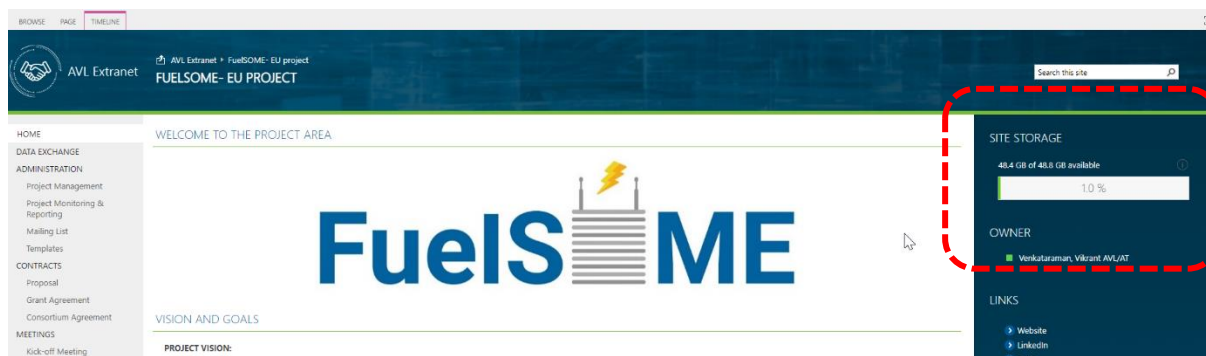


Figure 3: Screenshot of AVL Extranet SharePoint, showing storage space tracker.

Table 4 shows the partners who are leading the respective WPs.

Table 4: List of lead for each Work Package

Work Package	Lead
WP1	AEE
WP2	VTT
WP3	AVL
WP4	ZHAW
WP5	eBOS
WP6	AVL

Each WP leader has the explicit right to decide on which data needs to go under each WP sub-area and can also decide the accessibility rights for the data. The coordination of the respective WPs is left at the discretion of the WP leader and together with the task leaders. They can decide on the data content and other data related management activities. The PC will intervene only when the handling of the data is not being carried out as per the guidelines laid out. Currently, personnel from all partners have access to all WPs on the SharePoint.

The purpose of data generation and data preservation is to improve Solid Oxide Cell (SOC) stack technology at different levels. The first is to make it fully operational on methanol and ammonia and understand the fundamental degradation mechanisms. The second is to develop a novel system which can work on multi-fuels, while the third is to carry out a Life Cycle Sustainability Assessment (LCSA) and a Techno Economic Analysis (TEA) on such a system. The final task is to test and validate such a system. Data generated and preserved on different levels will help in overall progress of the technology.

### 3.2 Data acquisition and formats

Data will be acquired through various means in the project. Some of the data acquisition methods include but are not limited to the following:

- i. For experimental data - via test equipment, measurement devices
- ii. For simulation data – via software tools, data processing and analysis tools
- iii. For statistical data – via data processing tools, google analytics, social media
- iv. For personal data – google analytics, email.

Generated research data will be in (but not limited to) the following formats:

- docx
- xlsx
- pptx
- pdf
- csv
- txt
- xml
- py

Besides the above common formats, images/photos in the format of .png, .jpeg or any other relevant format, software codes and algorithms (in the respective formats of the software tools used), LCSA & TEA data in respective formats will also be generated.

Wherever applicable and possible, provisions will be provided for data formats to be migrated when new technologies/tools become available and are proved robust enough to not only ensure digital continuity but also availability of data.

On the AVL SharePoint, the following applies to the use of special characters in the file or folder name:

- One cannot use tilde (~), number sign (#), percent (%), Ampersand (&), Asterix (\*), Braces ({}), backslash (\), colon (:), angle brackets (<>), question mark (?), slash (/), plus sign (+), pipe (|), quotation mark (").
- One cannot use the period character consecutively in the middle of a file name.
- One cannot use period character at the end of a file name.
- One cannot start a file name by using the period character.
- Use of an underscore character ( \_ ) at the beginning of a file name will result in a hidden file.

In the framework of FuelSOME quality plan and control, a series of document templates have been created to ensure a consistent approach for all FuelSOME data and their versions.

According to D6.5 "Project management handbook" submitted in October 2022 (M2) by the PC (AVL), in Section 4.3 "Naming conventions", the file naming convention should be applied for all FuelSOME related documents as it is described below:

- All documents will contain the name of the project as the first part of the title: "FuelSOME";
- followed by the deliverable or WP or Task or Sub task number;
- followed by the file name for example or deliverables title;
- followed by a continuous version number "v0.11";
- followed by the date of the last changes made in the document "DDMMYY";
- followed by short project partner name for example "AVL".

### 3.3 Data overview per Work Package

This section provides a data overview per WP, identifying the possible data sources as mentioned in Table 5 while providing deeper insights into the generated data as mentioned in Table 6.

*Table 5: Data source for each WP*

Work Package	Data Source
WP1	Scientific literature study, market reports, past research projects
WP2	Laboratory instruments, experiments, test rigs
WP3	Laboratory instruments, experiments, simulations, test beds
WP4	Scientific literature study, market reports, past research projects



WP5	Data analytics from project website & social media, newsletter subscribers
WP6	Sound project management fundamentals & principles

Specific information on each WP is tabulated below:

Table 6: Detailed insight into data information/generation from each WP

<b>WP1</b>	What are the data sources and where do they come from?	The data will mainly come from open access literature, market studies, confidential results, and findings from FuelSOME partners and also from other research organisations outside of the consortium.
	What type of data will be created? And possible data formats	Database on fuel pathway technologies (on MS Excel, .xlsx files) Modelling and simulation will be via Dymola and Python and data generated will be from plots, numeric data, and source codes.
	What types of metadata will be there?	The following types are envisaged: <ul style="list-style-type: none"> <li>Literature register, list of KPIs, list of key parameters.</li> <li>Register of data will be available for each use case.</li> </ul>
	What past data from previous research projects will be used?	The previous project 'Ammonia2Fuel' will be looked into and possible results from ammonia recovery via membrane distillation will be used.
<b>WP2</b>	What are the data sources and where do they come from?	The data source is the measurement data from the instrumented test rigs (short stack test rig, 6kW full stack test rig and catalyst/reformer/cracking unit test rig)
	What type of data will be created? And possible data formats	The data will be available in tabular form and in plots and graphs. The table data can be converted into several formats such as .xlsx or .mat
	What types of metadata will be there?	Test plans, system flow diagrams, figures and pictures, system operating conditions, used stack models and details from the measurement instruments
	What past data from previous research projects will be used?	Past stack performance data will be used for comparison purposes against the performance data of stacks developed in the FuelSOME project.
<b>WP3</b>	What are the data sources and where do they come from?	The data sources for WP 3 are mainly from simulation models, test bed equipment and previous literature. The data sources are raw signals and measurement data which needs post processing.
	What type of data will be created? And possible data formats	The data created will be mainly plots, graphs and tabular data. The tabular data can be converted to .xlsx or .csv

	What types of metadata will be there?	Flow diagrams for models, block diagrams for models, test procedures and protocols, operating conditions. These will help other research groups replicate similar experiments in order to validate the generated results and also come to similar conclusions.
	What past data from previous research projects will be used?	<p>Learnings from past EU projects on SOFC technology past Austrian funded FFG projects on SOFC technology will be taken into consideration.</p> <p>Wherever possible, past data will be used for comparison purposes with the results generated from the current project.</p>
<b>WP4</b>	What are the data sources and where do they come from?	<p>Primary data on the technologies for the LCSA from within the consortium collected via questionnaires, mainly from partners of the respective WPs (mainly WP1, WP2 and WP3).</p> <p>Primary and secondary/background data from literature according to studies and publications on the topic in question as well as from existing LCSA databases environmental: ecoinvent, social: e.g., Exiobase, PSILCA. This background data will be obtained from literature research as well as the (to be defined) databases.</p>
	What type of data will be created? And possible data formats	<p>Two main data types will be created here:</p> <p>Life cycle inventory models in Excel and SimaPro, data formats for life cycle inventory models are Excel xlsx and SimaPro CSV. Potentially we will also compile ecospold files in XML.</p> <p>Life cycle impact assessment results will be graphs and tables in Excel xlsx as well as graphs and tables.</p>
	What types of metadata will be there?	<p>The life cycle inventory models will include the standard meta data according to SimaPro CSV and the ecoinvent v2.2 data quality guidelines.</p> <p>The life cycle impacts assessment results will not have any structured meta data.</p> <p>A detailed documentation of the inventory analysis and life cycle impact assessment will be compiled, explaining the data sources and calculation steps of the LCSA in reports/deliverables.</p> <p>All lifecycle inventory models according to the standard meta data format for life cycle inventory modules complemented with a comprehensive documentation in the form of reports/deliverables.</p> <p>The meta data will help in discovering new data and this will be done via literature research and exchange with consortium partners or partners within the LCA community.</p>

	What past data from previous research projects will be used?	Data from the projects 'Environmental assessment of the CO <sub>2</sub> methanation value chain' and 'Life Cycle Assessment of Renewable Methane for Transport and Mobility' will be used. Data from other research projects focussing on LCSA studies will also be used.
<b>WP5</b>	What are the data sources and where do they come from?	<ul style="list-style-type: none"> <li>• Google analytics<sup>2</sup>: Website visitors, demographic information, and behaviour patterns (top 10 pages visited, top 10 countries visiting the FuelSOME website etc) (no personal data is being used in FuelSOME. There is no intention to tie specific individuals to the data gathered)</li> <li>• Social media visitors (LinkedIn, Twitter, YouTube)</li> <li>• Events participants</li> <li>• Trainings participants</li> </ul>
	What type of data will be created? And possible data formats.	<ul style="list-style-type: none"> <li>• Personal data from the newsletter subscription<sup>3</sup> platform 'Mailchimp'<sup>4</sup>: First Name, Last Name, and email address.</li> <li>• From the Contact us forms<sup>5</sup> on the website, although the FuelSOME email that the form is forwarded to is handled by the PC.</li> <li>• Events forms/attendance</li> </ul>
	What types of metadata will be there?	No metadata is envisaged for this WP.
	What past data from previous research projects will be used?	No past data from previous projects will be used for this WP.
<b>WP6</b>	What are the data sources and where do they come from?	As this a project management WP, no specific data will be generated from this WP. Instead, data from all other WPs will be used here for management purposes.
	What type of data will be created? And possible data formats	Data from this WP will be mainly reports and presentations. So .docx and .pptx formats will be created.
	What types of metadata will be there?	No metadata is envisaged for this WP at this point of time.
	What past data from previous research projects will be used?	No past data from previous projects will be used.

<sup>2</sup> Some of the data collected by Google Analytics can be considered personal data, depending on the information that is being tracked and the specific laws and regulations in place in your justification. Personal data can include information such as IP addresses, demographic information, and behaviour patterns of individual users, which can be tied to specific individuals.

<sup>3</sup> FuelSOME newsletter subscription: <https://fuelsome.eu/subscribe-to-our-newsletter/>

<sup>4</sup> The Mailchimp platform complies with the GDPR regulations: [How to Get GDPR Consent for Marketing | Mailchimp](#)

<sup>5</sup> FuelSOME website 'Contact us form': <https://fuelsome.eu/contact-us/>

The approval of the availability of data in an open approach will need to be sent to the PC from the actual data owners via email. For this, a consent that the data can be distributed outside the Consortium must be included in the approval email to the PC. The following information as indicated in Table 7 should be included:

Table 7: Data Ownership Attributes

Data Owner	Description of data	Data filenames and version	Consent to publish data outside the FuelSOME Consortium
Who is the data owner	What the data include	Filenames and depository position	[YES/NO]

### 3.4 Partners tables

In this section, the FuelSOME Consortium presents the research data collected and processed or to be collected and processed in FuelSOME on a partner basis. The tables reflect partners' current knowledge about research data at the stage of submitting this deliverable (M06, February 2023). Updates or amendments will be included in the next version of the DMP (2nd version, M18, February 2024).

An initial data analysis as provided by the Partners at this stage of the project is provided in Tables 8 to 14. The exact type and format of all data is not finalised, but the initial outlines provided by partners will be reviewed and updated as necessary to the next DMP version to be submitted.

#### 3.4.1 AVL

AVL Leads WP3 "Lab scale validation of multi-fuel SOFC system" and WP6 which is "Project management". Data will mainly be generated from experimental and simulation work. In addition to that, data from project management, innovation and outreach activities can also be generated.

Table 8: AVL data table

N	Type of Data / Specific Dataset	Personal	Sensitive	Collection	WP/Task	Utility	Anonymisation / pseudonymisation	Access level
1	Simulation data	No	May be	Yes	WP3	Task 3.1 & 3.2, Task 2.3, Technology development	N/A	Internal
2	Experimental data	No	May be	Yes	WP3	Task 3.3, Technology development	N/A	Internal
3	Publications	No	No	No	WP3	Dissemination, Knowledge enhancement	N/A	Open or Public
4	Writing deliverables where AVL is	No	May be	No	WP3 & WP6	Dissemination output	N/A	The list of the ones which are public, and

	the lead author							which are sensitive is available on the SharePoint
5	Contribution to newsletters & project outreach	No	No	No	For all WPs	Dissemination	N/A	Public

### 3.4.2 AEE

AEE leads WP 1 which involves fuels specifications, technology concept design and modelling. They also have a considerable contribution in WP 3 under Task 3.5 where they will study the transferability of FuelSOME concept to other use cases.

Table 9: AEE data table

N	Type of Data / Specific Dataset	Personal	Sensitive	Collection	WP/Task	Utility	Anonymisation / pseudonymisation	Access level
1	Simulation	No	May be	No	WP 1	Task 1.3	N/A	Internal
2	Publications	No	No	No	WP 1, WP 3	Dissemination, Knowledge enhancement	N/A	Open or Public
3	Writing deliverables where AEE is the lead author	No	May be	No	WP 1	Dissemination output	N/A	Public
4	Contribution to project outreach & newsletters	No	No	No	WP 1	Dissemination	N/A	Public

### 3.4.3 ATENA

ATENA doesn't lead any WP as such but is actively involved in WP 1, WP 3, WP 5 and WP 6. In addition to that, they contribute a major chunk in WP 4 with techno economic analysis.

Table 10: ATENA data table

N	Type of Data / Specific Dataset	Personal	Sensitive	Collection	WP/Task	Utility	Anonymisation / pseudonymisation	Access level
1	TEA study	No	May be	May be	WP 4	Task 4.2	N/A	Internal
2	Writing deliverables where	No	No	No	WP 4	Dissemination output	N/A	Public

	ATENA is the lead author							
3	Contribution to project outreach, newsletters & dissemination	No	No	No	WP 4	Dissemination	N/A	Public
4	Publications	No	No	No	WP4	Dissemination, Knowledge enhancement	N/A	Open or public

### 3.4.4 EBOS

eBOS leads WP 5 and Task 5.1 'Dissemination, Communication and Clustering' where the FuelSOME website was designed and developed. Also the three social media channels (LinkedIn, Twitter, YouTube) which were created will be maintained for the duration of the project. Website posts, projects publications and announcements will be published through the website as well as to the social media channels of the project. The Newsletter design and distribution is also being handled under Task 5.1. A website visitor can subscribe to the project newsletter which is set to be distributed every 6 months while a welcoming newsletter is being sent upon subscription introducing the project and its scope. In order to subscribe to the project's newsletter, the visitor should state their First Name, Last name and email address to receive the projects newsletter. The output of Task 5.1 also involves three deliverables.

Table 11: EBOS data table

N	Type of Data / Specific Dataset	Personal	Sensitive	Collection	WP/Task	Utility	Anonymisation / pseudonymisation	Access level
1	Writing project reports (deliverables) where EBOS is the lead author	No	No	No	WP5	Dissemination output	N/A	Public as per GA
2	D&C news articles for FuelSOME website and social media	Yes, names of Consortium partners involved.	No	No	WP5	Dissemination output	N/A	Public as per GA
3	Newsletter subscribers	Yes, First Name, Last Name and email address	Yes	Yes	WP5	Dissemination output	N/A	Internal, not public

### 3.4.5 ELCOGEN

Elcogen is one of the key players in the project because they are the ones developing the stacks needed for the FuelSOME system. A lot of IP (Intellectual Property) and scientific output is expected to be generated as a result of their activities. The focus of their activity lies in WP2.

Table 12: Elcogen data table

N	Type of Data / Specific Dataset	Personal	Sensitive	Collection	WP/Task	Utility	Anonymisation / pseudonymisation	Access level
1	Experiments	No	Yes	No	WP 2	Task 2.1, Technology development	N/A	Internal
2	Post experiment analysis	No	Yes	No	WP 2	Task 2.6, Technology development	N/A	Internal
3	Writing deliverables where Elcogen is the lead author	No	Yes	No	WP 2	Dissemination output	N/A	Internal

### 3.4.6 WUT

WUT is mainly involved in WP 1 where they contribute to the FuelSOME technology concept and to the methanol value chain.

Table 13: WUT data table

N	Type of Data / Specific Dataset	Personal	Sensitive	Collection	WP/Task	Utility	Anonymisation / pseudonymisation	Access level
1	Scientific analysis & study	No	May be	No	WP 1	Task 1.2, FuelSOME concept development	N/A	Internal
2	Project outreach & contribution to newsletter	No	No	No	WP 1	Dissemination output	N/A	Public
3	Publications	No	No	No	WP 1	Dissemination	N/A	Open or Public

### 3.4.7 VTT

VTT is another key player in the project who leads WP2 "FuelSOME SOFC technology development at stack level". Besides the major share in WP2, VTT is involved in Task 3.4 where they will look into system scale up and integration potential with fuel production units.

Table 14: VTT data table

N	Type of Data /	Personal	Sensitive	Collection	WP/Task	Utility	Anonymisation /	Access level
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	Specific Dataset						pseudonymisation	
1	Experiments	No	May be	No	WP 2	Task 2.2, 2.4, 2.5	N/A	Internal
2	Publications	No	No	No	WP 2, WP 3	Dissemination	N/A	Open or Public
3	Writing deliverables where VTT is the lead author	No	May be	No	WP2, WP 3	Dissemination output	N/A	The list of the ones which are public, and which are sensitive is available on the SharePoint
4	Contribution to newsletters, project outreach & dissemination	No	No	No	WP 2, WP 3	Dissemination	N/A	Open or Public

### 3.5 Generated research data

This section provides information in regard to 'Open access' data, the FAIR principles, Data processing & reuse of existing data and Intellectual Property Rights (IPR).

#### 3.5.1 Open access

In the framework of CINEA and Horizon EU, a step toward Open Science policies is obligatory and highly recommended. All research publications coming out of the project will be available as open access and the costs for these publications will be covered from the project costs. In most cases GOLD open access will be provided and in case the budget falls short, then GREEN open access will be provided<sup>6</sup>.

The project will create at least the following categories of outputs:

- public deliverables,
- scientific publications,
- contributions to standards,
- open-source contributions,
- datasets from experimentation and testing.

All **public deliverables** will be made available on the project's website and later after the project has ended on the EU repository.

Public data arising from the project will also be shared with other similar EU projects in order to increase the project's outreach and maximise the project's impact.

Broader access to scientific publications will help in the following ways:

<sup>6</sup> The difference between GOLD and GREEN open access relates mainly to the costs incurred for publishing open access. More information can be found on <https://scientific-publishing.webshop.elsevier.com/publication-process/difference-between-green-gold-open-access/>



- **Avoid duplication of effort** – both financial and time resources can be saved when data on similar topics is available to the public.
- **Encourage collaboration among researchers** – There is a high likelihood that different research group, organisations and institutes are working on similar ideas and topics across the globe. Innovations and outputs generated from a group from one side of the world when made publicly available will foster global collaboration.
- **Build on previous research results** – Science and technology always progresses when things are built upon, and this is very crucial for further advancement.
- **Speed up innovation** – With the current world need for devices with higher energy efficiency and lower emissions, making data publicly available will speed up innovation.
- **Involve citizens and society** – All activity is ultimately done to improve the lives of people living on this planet and hence this ultimate goal must always be kept in mind.

### 3.5.2 FAIR principles

Data generated within the project will be made findable, accessible, interoperable, and reusable. This will be in-line with the EU FAIR data principles.

#### 3.5.2.1 Findability of data:

Data that will be published on a public data repository will typically use a DataCite or DublinCore based metadata schema. All data, including published ones and the ones that need to remain closed access will be described with Metadata readme.txt files that includes key metadata similar to DublinCore metadata fields and where required discovery metadata related to the actual research data.

#### Outline for keywords used:

Standard vocabulary and nuances will be used. Specific filters will allow finding data related to this project with specific keywords such as – *Solid Oxide Fuel Cells, fuel cells, ammonia, hydrogen, alternative propulsion systems, ocean going vessels, life cycle assessment, stacks, methanol* etc. The use of keywords is a mandatory field upon data deposition in the selected data repositories and will be adhered to:

- Outline for naming conventions: Clear naming conventions consisting of mandatory parts will be created (based on section 3.2) for:
  - Metadata,
  - datasets for storage.
- Outline for clear versioning of documents: There is a quality process in place where all documents will be provided with clear version numbers to not only find the latest document/file that must be used but also to allow users to go back to previous versions to see what exactly was changed (section 3.2).

#### 3.5.2.2 Accessibility of data:

It is differentiated between accessibility of data within the Consortium and accessibility of data outside the Consortium.

To share data with the FuelSOME Consortium, a SharePoint was set up on the AVL Extranet – a platform which provides data collaboration possibilities between AVL and external parties: FuelSOME Consortium partners. Files can be viewed, synced, and shared across all Microsoft compatible devices and users are able to work simultaneously on respective documents. The SharePoint enables the following:

- It facilitates data sharing for intermediate results, and final results.
- It enables users to work with quality-controlled data sets and versions approved by data owners and providers.
- It enables both data owners and data providers to choose to which WP and task they want to contribute the data and to what level.

Data that will be openly accessible is described in sub-section 3.5.1. Raw data from scientific publications will be uploaded to public repositories (such as Zenodo) and other raw data from industry partners may be available upon request provided they do not fall under confidential or IP protected data.

All metadata will be made openly available under a Creative Common Public Domain Dedication as laid out in Article 17 of the GA.

The data on Zenodo is in principle available for at least 20 years and the metadata will remain available without restrictions or time limitations. Zenodo is a general-purpose open repository developed under the European OpenAIRE program and operated by CERN. It allows researchers to deposit research papers, data sets, research software, reports, and any other research related digital artefacts.

Zotero is a public repository for collecting literature and this will be used as well. Zotero allows multi-user collaboration and thus is envisaged to be better than local sources for collecting and storing references and literature.

### 3.5.2.3 Interoperability of data:

In order to ensure maximum interoperability of data, standard or open formats will be used to facilitate data exchange both within and outside the project. Whenever software related data is concerned, commercially available or open-source software formats will be used.

The data set for scientific publications will be linked to the corresponding DOI (Digital Object Identifier) of that publication.

### 3.5.2.4 Reusability of data:

Documentation .readme files and Metadata will be created in addition to the typical supporting files accompanying scientific publications.

Data that will be stored in the public repository will be made available for reuse under a Creative Commons usage license like CC BY. The European Commission (EC) announced in 2019 that it intends to join other public institutions around the world to share published documents and it has adopted CC BY4.0. The CC BY<sup>7</sup> is:

- **Universal** – applicable to all documents
- **Unrestricted** – generally speaking, the only condition is attribution.
- **Simple** – user friendly
- **Cost free** – no fees involved.
- **Non-discriminatory** – terms of CC-BY are open to all potential actors in the market.
- **Transparent** – text of licences is publicly available, accompanied by supporting documents, guidelines, and other material in multiple languages.

Non-confidential data will be available for maximum reuse by other interested parties and stakeholders as it is not the intention of the project or the project Consortium to withhold any data.

### 3.5.3 Metadata produced from the project:

Metadata creation is very important in the project and will be taken seriously. The creation of Metadata will help other stakeholders and researchers find, identify, and discover data. The type of metadata to be created will depend on the tasks and sub-tasks carried out in the project.

For experiments, the following details will be recorded.

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<sup>7</sup> Some of the text for the bullet points have been taken verbatim from <https://creativecommons.org/2019/04/02/european-commission-adopts-cc-by-and-cc0-for-sharing-information/>

- i. The nature of the experiment.
- ii. The devices/apparatus/equipment used, and the accuracy achieved from these.
- iii. The experimental procedure or protocol followed.
- iv. The operating conditions and environmental conditions under which the experiment was performed.
- v. The measurement data itself.

It is the intention that any experimental work can be recreated, and results will be reproducible once the project has concluded.

For simulations:

- i. Simulation tool used.
- ii. Initial conditions or boundary conditions.
- iii. Scientific principles applied.
- iv. Flowchart for code or process
- v. The simulation results
- vi. Type of simulation (0D, 1D, 2D or 3D) carried out.

It is also the intention that simulation work carried out within the project must be repeatable/reproducible by other research groups worldwide solely based on the metadata provided.

For LCSA & TEA:

- i. The procedure followed for LCSA and TEA.
- ii. Detailed documentation of the inventory analysis and life cycle impact assessment. Data sources and calculation steps will be outlined.
- iii. Standard meta data formats as per life cycle inventory modules.

### 3.6 Data processing & reuse of existing data

Existing data from past projects will be studied and made use of wherever possible. Past data will also be used for comparison purposes, when possible, against new improvements done in the FuelSOME project. Data processing from respective tasks and sub-tasks will be as per the tools and methods available with respective project partners.

### 3.7 Intellectual Property Rights

Intellectual property (IP) is key for any research organisation or industry, or other partners involved in the project. The IPR being generated out of the project either by a single partner or by means of cooperation between multiple partners will be respected and handled as per the terms and conditions stated in section 8 of the FuelSOME CA. Therein, the necessary protocols and tools for resolving any disputes that may arise are also defined.

Data or methodologies or processes leading to IP must be kept confidential. The relevant information can be stored on the AVL SharePoint or partner local storage with special accessibility rights to only select participants. Also, **data that will lead to IPR cannot be published or disseminated in any form in any public domain.**

The General Assembly, which meets once in six months, will go through the generated data (up to that date) and decide on a case-by-case basis as to which data can be released and which needs to be protected for IPR.

It is highly recommended to inform the PC when any partner(s) has intentions and going ahead with IPR filing. This information is only needed so that the PC and WP5 lead can communicate the project's success to the outside world.

## 4. Data storage and management

This section provides information on data archiving and preservation, emphasising on which data needs to be preserved, what is potentially useful for others to use, what has scientific or technical value and what must be legally destroyed. It also touches on the topics of data storage during research process and data sharing and dissemination.

### 4.1 Data archiving and preservation

All data generated during the course of the project will be archived and preserved on AVL servers. This data will be available for a period of 5 years after the project has ended. Data on the AVL extranet will be backed up on a regular basis by the IT (Information Technology) department. Data that can be made available to the public will be transferred to respective public repositories and transferred to the corresponding EU repository as well. Data that is sensitive and confidential will be transferred back to the respective partners or just deleted.

#### 4.1.1 Which data needs to be preserved?

Data generated from experimental work on short stacks, full stacks, components, sub-systems, and systems needs to be preserved. This data will be helpful for commercialisation activities, to take the technology to market readiness levels.

Data from LCSA and TEA needs to be preserved in order to provide information to relevant stakeholders and also to add to the research base for such concepts and systems. This will help policy makers in their decisions.

Data from simulations and modelling activity will also need preservation. The methodologies and logic followed for simulations will be key for further extension and improvement of activities.

#### 4.1.2 What is potentially useful to others?

Data from WP1 to WP4 is expected to contribute to science and help in further advancement of respective processes, technologies, and methods. The scientific publications arising out of the data will help in further advancement of science in the respective areas.

Data from WP4 will also help policy makers in looking at the concept as a whole and assessing it from a life cycle analysis.

Data from WP2 and WP3 will be helpful for industrial partners and OEMs (Original Equipment Manufacturers) to take the technology to higher technology readiness levels.

Data from WP 1 will be helpful for raw fuel suppliers and also for fuel processing firms. Environmentalists and ecologists will also aid from a detailed fuel supply chain analysis.

Data generated from FuelSOME is envisaged to be useful for:

- i. The European fuel cell industry,
- ii. SOFC stack developers,
- iii. Test bed customers and suppliers,
- iv. Shipbuilders and IMO (International Maritime Organisation),
- v. Policy makers at the EU/EC and maritime industry.

Proving concepts and methodologies on a lab scale will provide confidence to take it to higher TRL (Technology Readiness Level) and will pave way for bigger demonstration projects.

#### 4.1.3 What has scientific, cultural, or historical value?

No data is envisaged to have cultural or historic value but only scientific value. Data from WP1 to WP4 will have tremendous scientific value.

#### 4.1.4 What legally must be destroyed?

Any sensitive data related to any of the project partners, or third parties must be deleted and destroyed after the project period. The deletion/destruction of sensitive data pertains to removal from both AVL SharePoint and from local storage media of the partners.

Sensitive data that has already been used for any written material or publication (with consent from the party generating the sensitive data) need not be destroyed or deleted.

### 4.2 Data storage during research progress

Data on the AVL SharePoint is regularly backed up on central and backup AVL servers. Hence the risk of losing data is minimal. The aim of data storage during the research progress is to make data readily available to all project partners and their respective members who are involved in the project.

Critical data for each WP is to be stored on the SharePoint under the respective WP sub-area and access will be given only to those working on that particular task. The project coordinator has by default access to all data. The WP lead has the right to decide who must and must not have access to this critical data. If not, restrictions are placed then data is available for all people who have access to the SharePoint and subsequent sub-areas.

Besides the above storage location, it is highly plausible that data is also stored on the respective servers and commercial cloud storage of partners involved in the FuelSOME Consortium.

### 4.3 Data sharing & dissemination

Maximising the project's outreach is one of the goals within the project. Data stored on the AVL SharePoint will be unencrypted and stored using standard character encodings to allow uninterrupted access to all project partners.

During the project phase, each party or partner is entitled to carry out dissemination activities that will promote the project or any specific topic within the project and its output. The dissemination activity will need prior approval from both the PC and the dissemination WP leader. Each partner is highly encouraged to disseminate as much information as possible to the public unless it goes against their legitimate interests or affects other IPR arising from the project. In case legitimate interests of any partner may be harmed due to the planned dissemination, the disseminating partner needs to have written consent from the partner whose legitimate interests may be harmed, or the dissemination must not take place unless appropriate steps are put in place to safeguard the interests.

The FuelSOME partners are encouraged to submit and publish ground-breaking results that arise out of their respective WPs or Tasks. This will lead to both establishing a base for new scientific results and adding to further literature base of areas where results are scarce.

After the project phase, exploitation activities will be carried out for a period of 2 years, subject to the same terms and conditions as mentioned for dissemination during the project phase.

A detailed dissemination, communication and exploitation plan will be developed as part of WP5, and the first version will be available in February 2024 (M18) and subsequent versions in August 2025 (M36) and August 2026 (M48) respectively.

Figure 4 shows the data life cycle and how information from one stage flows into the other.

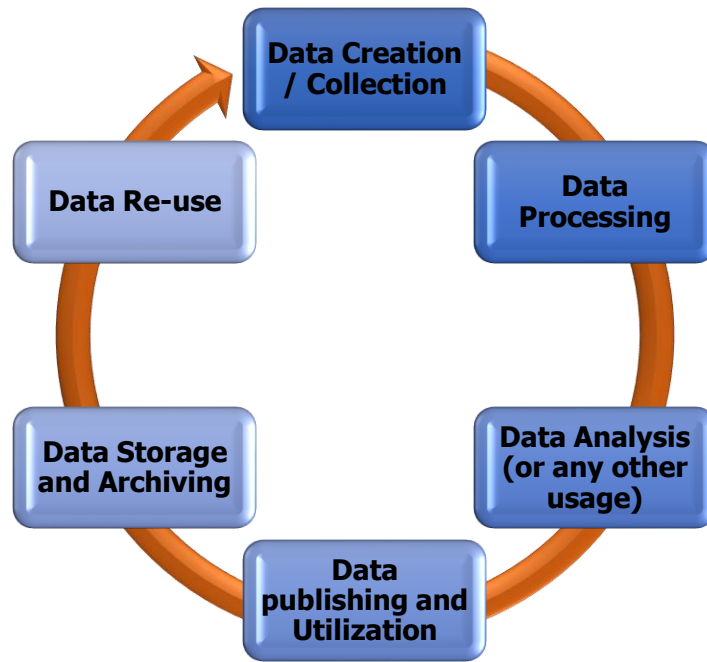


Figure 4: Data lifecycle

## 5. Data ethics and Security

Data ethics, data protection and data security are of prime importance to the FuelSOME Consortium and the project. The Consortium and the project will strive to ensure good research ethics and take all actions necessary to prevent any situation where personal or sensitive information could get misused.

### 5.1 Ethics – Personal Data

All personal information collected during the project such as names, email id's, phone numbers and others will be treated with in accordance to European data protection laws. Personal data that will be collected, will be stored, analysed, and used anonymously.

#### 5.1.1 Dissemination, communication & exploitation activities data usage processes

It is expected that personal data will be collected mainly from WP5 'Dissemination, communication & exploitation' activities. During the course of the project, several events with third parties will be planned, such as seminars, meetings, summer/winter schools, workshops, conferences etc. It is also possible that personal data may be collected during the execution of other technical WPs.

##### 5.1.1.1 FuelSOME mailing lists.

The FuelSOME list of contacts relates to one general mailing list for all FuelSOME partners and one with the key contacts / WP leaders. Additions or removals to the mailing lists are managed directly by one partner (EBOS) with approval from the PC for any modifications. The purpose of this list is to keep a well organised list of contacts for the FuelSOME communications and access is restricted only to FuelSOME Consortium partners. The mailing lists will be erased after the project end (31/08/2026) and not maintained after the project end. Any person has the right to opt out of this list by direct email to the PC (AVL) and/or EBOS.

##### 5.1.1.2 Meeting related material

This relates to any document created and used for the purposes of FuelSOME meetings. These may relate to agendas, presentations, minutes, signature lists or any other internal document created for the purposes of FuelSOME meetings. All these documents will be created and maintained for internal purposes of FuelSOME and only FuelSOME partners will have access to them at the FuelSOME AVL SharePoint under the meetings section. They will be kept for up to 5 years after the project end.

##### 5.1.1.3 Workshops/Conferences and Training sessions

These data relate to the creation of workshops, agendas, programmes, participants' lists etc and in general dissemination material related to FuelSOME organised workshops. Regarding the external publication of these, it is considered that this material can be fully anonymized so that it excludes personal information from the presenters/participants in the related programmes/agendas that will be publicly shared. For the parts of the related material that will be used for the workshop organisation internally to FuelSOME, the related files will be stored in the FuelSOME AVL SharePoint under the section 'workshops'.

##### 5.1.1.4 Newsletters, social media, and other dissemination material

Unless otherwise expressly specified in the CA, the data controller shall be responsible for the personal data processing carried out for Project dissemination purposes. To this end, the data controller shall:

- Collect and keep all relevant personal data (including lists of contact details), or copies thereof;
- Monitor relevant communications;
- Address to Project Partners instructions and guidelines on Project dissemination activities (including any EU or other state guidelines, whenever available);

- Inform Project Partners of any policy or legal requirements reviews and changes.

#### **5.1.1.5 Usage of cookies (in FuelSOME website)**

In the cases that in the FuelSOME website the usage of cookies is needed, a related pop-up window informing the user is present, prompting the user to accept (or not) the conditions under which her/his personal information are stored.

EBOS Data Protection Officer (DPO) is assigned to handle such matters and make sure subjects are informed and they consent when it comes to sharing their personal data.

## **5.2 Informed Consent Procedures**

Data confidentiality and integrity will be dealt at different levels.

- i. Data at rest – This refers to any data stored on the AVL SharePoint or on local servers of respective partners. This data will be protected by the respective IT policies of the corresponding partners.
- ii. Data in transit – secured by means of safe data transfer mechanisms such as Transport Layer Security (TLS)

The individuals or group of individuals whose data will be used or stored, will be informed comprehensively about the intent use of the information provided by them and will have to give prior approval in written form for use of their data for this research and scientific purpose.

## **5.3 Legal Aspects**

Some of the legal aspects with respect to data management is discussed in this section.

### **5.3.1 Embargo periods:**

Theses arising from master programs and PhD programs, from students who will work on FuelSOME project topics, will be subject to an embargo period of 2 years after the project end. The embargo period and conditions only come into force if the content of the theses:

- Is confidential to one or more partners.
- Has sensitive or novel information or knowledge that is new for the project.

If those conditions don't comply then the theses should adhere to the open access standards like for any other publication in the project.

When needed, the partners should also adhere to Article 13, section 13.1 of the GA should longer embargo period be needed.

### **5.3.2 Sensitive data:**

Some of the tasks in certain WPs delve into fundamental science aspects and other novel engineering topics. It is highly probable that a lot of sensitive data will be generated from these WPs. Access to sensitive data to other partners will be with the sole consent of the party generating that data. When using sensitive data for any outreach activities, the data must be filtered and be made as general as possible in order to protect the IPR of the generating parties.

In all cases, Article 13, section 13.1 of the GA must be adhered to.

### **5.3.3 Data leaks:**

It is the duty and responsibility of the PC and every Lead from respective partners, to ensure that no data is leaked for no reason whatsoever. Examples of data leaks include, but not limited to, the following:



- i. Accidental publication or release of a sensitive deliverable online.
- ii. Sensitive data from a process or partner being used without consent or published online.
- iii. Project specific data being used or stored on personal computers and servers.
- iv. Project specific data being used as input for another process or project without informed consent.

Data leak issues will be jointly decided by the GA where the PC will call for an emergency meeting should such an issue arise, and joint action will be taken accordingly.

## 5.4 Ethical Aspects

The project does not involve research on humans or animals of any living beings and hence no ethical issues on this front is foreseen or expected.

## 5.5 Security

Data generated from the project is stored securely on AVL's SharePoint. The IT principles of AVL provides for and ensures safe and secure storage of data. Data can be accessed only by the FuelSOME partners. Everyone (people external to AVL) is required to register themselves on [www.avl.com](http://www.avl.com) and create an account, following which their email address will be whitelisted. A two-factor authentication is needed for external parties to access AVL SharePoint, and this adds an extra layer of security.

The PC maintains the SharePoint and decides which partner has what level of access to each area of the SharePoint.

Accounts with private email domains such as @gmail.com or @yahoo.com will not be granted access to the AVL Extranet.

Sensitive information from partners will be kept within reach to either the project Consortium or to a limited number of personnel working on that specific task or sub-task.

All project members will be responsible for ensuring that project-related data is safely and securely handled and stored during the entire course of the project, in compliance to relevant EU data protection regulations.

All data on AVL servers gets regularly backed up (every day) and thus there is very little probability for loss of data.

## 6. Summary

The initial version of the **Data Management Plan** (DMP) serves as a reference document for all the topics mentioned in the previous sections. D6.4 is addressing WP6 'Project Management' and the work under Task 6.4 'IPR, Innovation & data management'.

In the first part of this document, clear **roles and responsibilities** are established. This allows not only the PC but also the respective leads from every partner to take part and be responsible for the data generated from their organisations. The tasks that typically fall under the process of data collection and management are also summarised in Table 3. There may be more tasks out of which data will be generated but at this point of time and stage in the project, these tasks mentioned in Table 3 provide an overarching picture.

The amount of data that is expected to be generated, the location where it must be channelled under the respective sub-areas on the SharePoint, the data produced per WP and the need for creating and publishing Metadata are also discussed through the report. With the systematic **FAIR approach**, data will be made easier to **find**, will be **accessible** at any point of time to anyone needing it, will be **interoperable** due to the formats used to store it and can be **reused** if needed.

The Intellectual Property Rights (IPR) is a very critical topic when it comes to data and managing innovation arising in the project. It is always the intention of the project to maximise output but at the same time to protect the interests of the partners involved in innovative tasks and ideas. **IPR** will be dealt according to the terms and conditions mentioned in the CA and will be discussed jointly during the general assembly meetings involving the Consortium.

Keeping data in respective **formats**, processing it according to certain rules and ensuring the quality of data is vital to the project. This is why guidelines for documentation and data quality are provided and are expected to be followed by the Consortium partners.

Topics on data archiving and preservation, **data storage** during research progress, data sharing during and after the project phase are essential areas which need certain guidelines and rules. It is the intention to lay these guidelines and rules to the best extent possible in order to ensure data usage and preservation to the highest extent possible.

**Ethics and security** are of utmost importance when multiple partners and stakeholders are involved in the project. The PC along with the leads from respective partners will ensure that data is always securely stored and transmitted both during rest and during transmission. It is believed that some topics and certain data might be sensitive and thus guidelines on how to deal with these are also listed.

Overall, the FuelSOME DMP is envisioned to be a living document which will undergo changes and modifications whenever needed and wherever necessary. In the initial stages of the project, not all data use cases or matters that concern data usage may be clear. Hence, three more elaborated versions of the FuelSOME DMP, as per Figure 1, will be delivered during the first and second reporting periods *viz.* February 2024 (M18) and August 2025 (M36) with a concluding report due in August 2026 (M48).