



**Pre-normative REsearch for Safe use of Liquid Hydrogen (PRESLHY)**

Project Deliverable

# **Plan for the Dissemination, Communication and Exploitation**

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## **Publishable summary**

The present deliverable outlines the strategy for dissemination, communication and exploitation of the knowledge, data and results developed during PRESLHY project. The plan identifies the activities and channels deemed to be the most effective for a profuse dissemination of the project key outputs to the relevant target groups. The timing of the various activities is established.

The dissemination, communication and exploitation plan will be updated in M18 and M36 to monitor the dissemination activities progress and achievements, and to include new dissemination actions when established.

## Key words

Liquid hydrogen, dissemination, exploitation, dissemination channels, target groups

## Abbreviations

BRHS	Biennial Report Hydrogen Safety
CFD	Computational Fluid Dynamics
FAIR	Findable Accessible Interoperable and Reusable
FCH	Fuel Cells and Hydrogen
GH2	Gaseous Hydrogen
LH2	Liquefied Hydrogen
ORDP	Open Research Data Pilot
RCS	Regulation, Codes and Standards
SDO	Standard Development Organization

## Definitions

**Dissemination:** process of spreading and making available the results and deliverables of the project to stakeholders and public.

**Exploitation:** process of making use and benefiting from the produced resources.

**White paper:** authoritative guide or report explaining the theory and benefits of a technology, product or policy.

Table of Contents

<b>Disclaimer</b> .....	<b>ii</b>
<b>Publishable summary</b> .....	<b>iii</b>
<b>Key words</b> .....	<b>iv</b>
<b>Abbreviations</b> .....	<b>iv</b>
<b>Definitions</b> .....	<b>iv</b>
<b>1 Introduction and Scope</b> .....	<b>6</b>
1.1 Project overview .....	6
1.2 Deliverable objectives .....	6
<b>2 Dissemination and exploitation</b> .....	<b>6</b>
2.1 Dissemination key products .....	7
2.1.1 Data Management and Common Scientific Publication (leader KIT).....	7
2.1.2 Engineering correlations and tools (leader UU) .....	8
2.1.3 Handbook of Hydrogen Safety: chapter on LH2 safety (leader HySafe) .....	8
2.1.4 Guidelines for safe design and operation of LH2 infrastructure (leader AL) .....	9
2.1.5 Recommendations for RCS (leader AL).....	10
2.1.6 White Paper on the use of LH2 (leader KIT) .....	10
2.2 Target groups .....	11
2.3 Dissemination channels .....	11
2.3.1 Project website .....	12
2.3.2 Flyer .....	14
2.3.3 Newsletter .....	14
2.3.4 Posters .....	14
2.3.5 Workshops .....	14
2.3.6 Conferences.....	16
2.3.7 International meetings and events .....	16
2.3.8 Scientific publications .....	17
2.4 Time plan and responsibility .....	17
<b>3 Communication activities</b> .....	<b>18</b>
3.1 Internal communication .....	18
3.2 External communication.....	18
<b>4 Sustainability</b> .....	<b>18</b>

## 1 Introduction and Scope

The plan for dissemination, communication and exploitation clarifies how the project results will be shared with stakeholders and how they will be employed.

### 1.1 Project overview

PRESLHY is a EU FCH JU 2.0 funded research and innovation activity (Project ID 779613). The action addresses pre-normative work for the safe use of liquid (cryogenic) hydrogen (LH<sub>2</sub>) as an energy carrier.

The project initiates from the identification of the safety critical areas where knowledge gaps are present and specific standards are needed. The mission is to close the identified knowledge gaps and technological bottlenecks through the development and validation of models and engineering correlations aimed to underpin the design of efficient prevention and mitigation concepts, remove the over-conservative requirements for innovative solutions and provide reliable and consistent hazard distance and zones rules for LH<sub>2</sub> based technologies, achieving a cost-efficient and inherently safer design.

The derived models and correlations shall be either directly implemented or at least referred to existing or new international performance-based Regulations, Codes and Standards (RCS).

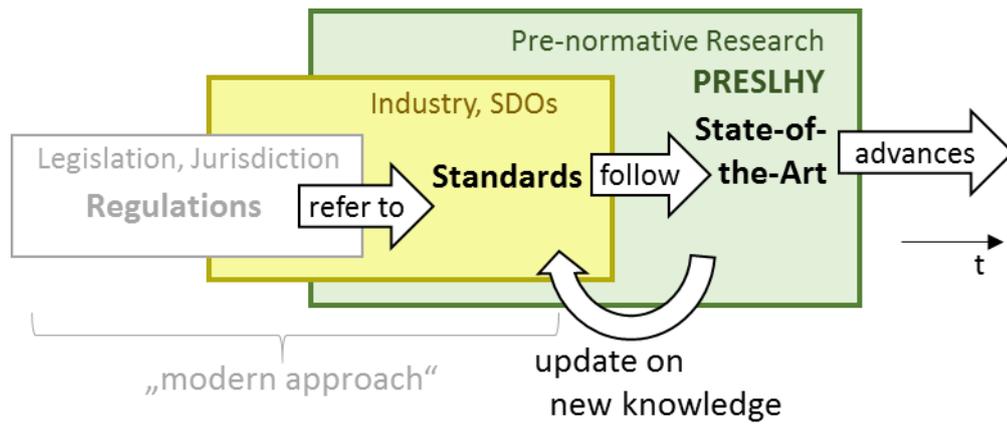
### 1.2 Deliverable objectives

The developed dissemination, communication and exploitation plan addresses the following aspects:

- Identification of the area of expected impact.
- Description of the project products that will be generated and disseminated.
- Identification of the target groups of stakeholders that will make use of and benefit from the project results and products.
- Description of the dissemination methods, tools and channels that will be used to make available the project outputs and maximise the stakeholder engagement.
- Outline of the plan timing.
- Definition of a communication strategy to contact the potential users.
- Management of project outputs after the formal completion of the project.

## 2 Dissemination and exploitation

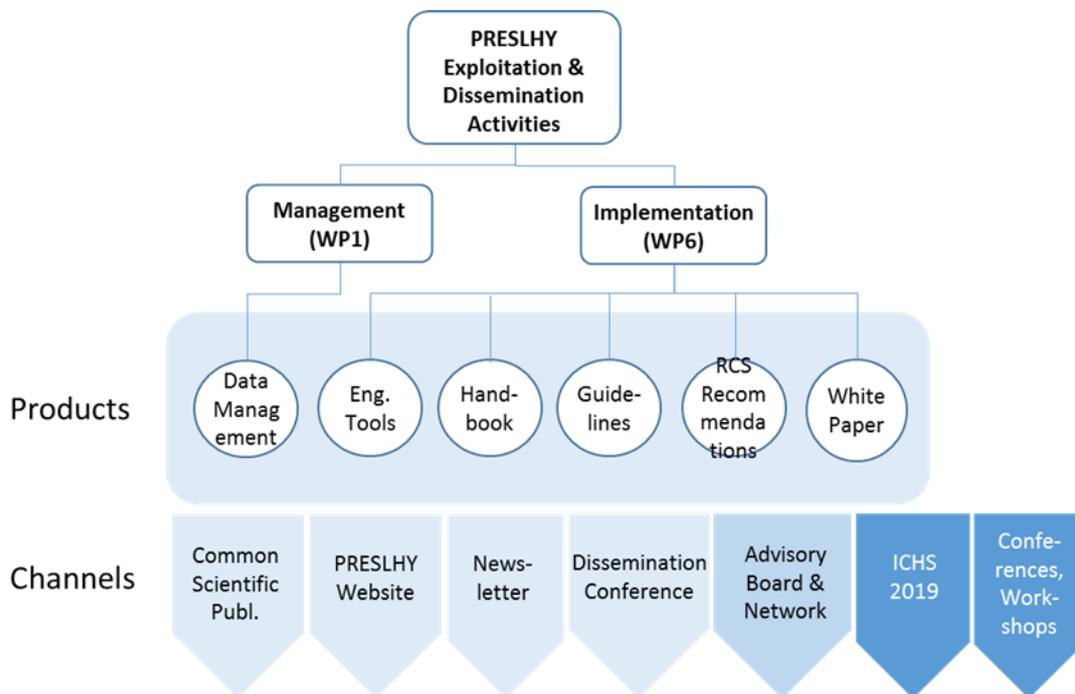
The main impact of the project will be achieved by the implementation and exploitation of the pre-normative research outcomes, i.e. advancement of knowledge beyond the state-of-the-art, into performance-based RCS. The latter in turn will be the main reference for legislative regulations, as suggested by the “modern approach” shown in Figure 1. Therefore, the core of the dissemination and exploitation activities will consist of the extraction and translation of the project scientific findings into suitable information and tools for international SDOs, regulatory bodies and industry, who represent a large part of the targeted audience. To assure a strong interaction, complementarities and synergies between the project outcomes and SDOs and industry needs, a number of key representatives of these two categories are members of the project Advisory Board.



**Figure 1. Impact areas and connections among PRESLHY pre-normative research, standardisation and regulation (impact areas of PRESLHY in green and yellow).**

## 2.1 Dissemination key products

In this section, the main outputs produced by the project are presented and discussed. Along with the description of each key product, attention is paid to the development process, the potential user and the employed dissemination channel. The present plan includes timing and frequency of the identified activities. Figure 2 shows a concise scheme of the PRESLHY dissemination and exploitation activities here described.



**Figure 2. PRESLHY's dissemination products and channels.**

### 2.1.1 Data Management and Common Scientific Publication (leader KIT)

The project will generate new unique experimental data, which will need to be preserved. It is important to assure the data storage in digital format and open access to the research community or any interested party for review, verification and validation of analytical and numerical models, etc. PRESLHY participates in the Pilot on Open Research Data in Horizon 2020. Data will fulfil the Horizon 2020 requirements of being findable, accessible,

interoperable and reusable (FAIR). All the details and strategies to achieve these goals are given in the Data Management Plan (see WP1, deliverable D1.3 “Data Management Plan 1st Version”). Requirements, recommendations and further general aspects of the Data Management Plan were discussed during the project kick-off meeting (20<sup>th</sup> April 2018, Karlsruhe). It is anticipated that the following dissemination channels will be employed:

- SUSANA project database is currently under consideration for storage and data open access for verification and validation strategies for CFD in hydrogen and risk assessment.
- RADAR project infrastructure and services will be used for the long term and more concise data storage (<https://www.radar-service.eu/>).
- Publication of the research results in peer reviewed journals, such as the International Journal of Hydrogen Energy, key international conferences, such as the International Conference on Hydrogen Safety, presentations at workshops, exhibitions, schools, etc.

### **2.1.2 Engineering correlations and tools (leader UU)**

The experimental data generated throughout the project duration will be employed for development and validation of analytical models, and to generate engineering correlations for calculation of hazard distances and parameters.

The project partners will describe in detail the developed correlations and tools according to a unified template on quarterly basis as a tool is available. A 1<sup>st</sup> version of detailed description of novel safety engineering tools for LH2 will be prepared in M24, whereas the final version will be ready in M35.

The main dissemination channels that will be employed within the project are:

- Implementation into existing and/or emerging integrated platforms for hazards and risks assessment, e.g. European e-Laboratory (NET-Tools project), HyRAM tool (Sandia National Laboratory, USA) and similar Canadian tool (UTRQ), etc. The tools will be freely accessible online to any stakeholders performing safety engineering design, education and training.
- Project dissemination conference: the novel engineering tools for LH2 will be introduced to stakeholders at the dissemination conference envisaged in M36.
- Transfer to higher education courses, e.g. PgCert in Professional Development (Hydrogen Safety) at Ulster University, etc.
- Transfer to SDOs the recommendations for RCS, including engineering correlations.
- Transfer to stakeholders the guidelines through publishing them on the project website, including engineering correlations.

### **2.1.3 Handbook of Hydrogen Safety: chapter on LH2 safety (leader HySafe)**

The knowledge gathered and generated during PRESLHY will be organised and disseminated in the form of a chapter on safety of liquid and cryo-compressed hydrogen, which will be integrated into the Handbook of Hydrogen Safety. The Handbook, known as well as Biennial Report on Hydrogen Safety (BRHS), was one of the leading outputs of the European Network of Excellence (NoE HySafe) “Safety of hydrogen as an energy carrier” (2004-2009). The aim of the Handbook is to provide technical insights into the state-of-the-art knowledge on hydrogen safety, ranging from the phenomena relevant to accidents up to practical information, such as hazard and risk control measures or emergency response plans. The Handbook has been developed and maintained by the International

Association for Hydrogen Safety (IA HySafe), partner of the consortium indicated as leader of the chapter development.

The goal of the chapter is “to provide up-to-date knowledge and thus to underpin the stakeholders’ understanding of LH2 safety, including prevention and mitigation techniques” (Grant Agreement). The chapter will include the review of the state-of-the-art, strategies and regulations conducted in WP2 (see D2.1, D2.2, D2.3). The new knowledge generated in WP3-5 will be the core of the chapter and will include description of hazards, key experimental results, description of the developed models and engineering correlations related to LH2 releases and dispersion, ignition, jet fires, explosions, etc.

The table of contents will be prepared and agreed in M12 (Milestone MS6.1). The project meetings will comprise the progress of the chapter development as part of standing agenda. Deliverable D6.1 “Handbook of hydrogen safety: chapter on LH2 safety” will be completed in M34. The chapter will be disseminated through different channels to various potential users, including but being not limited to:

- Project dissemination conference: the chapter will be introduced to stakeholders at the dissemination conference envisaged in M36.
- Online websites: deliverable D6.1 will be available as public report on the project website ([www.preslhy.eu](http://www.preslhy.eu)). The contents of the handbook can be implemented as a public Wiki on the BRHS website (<http://www.hysafe.net/wiki/BRHS/BRHS>). The advantages of this channel are multiple. Firstly, it provides an open and user-friendly resource, which can be widely distributed and used as a reference document by practicing engineers and as a compact handbook by new comers in hydrogen safety research and education. Furthermore, the implementation as a public Wiki makes the handbook a dynamic resource, meaning that it can be opened to new contributors, further developments and updates even beyond the project formal duration.
- Educational and training activities, such as higher education in academia, industry short courses, schools, etc.
- Activities of IA HySafe, European Hydrogen Safety Panel, RCS Strategy Coordination Group, ISO TC197, CEN/CLC/TC6, UN GTR#13 IWG SGS, etc. They might use the Handbook in their reviews of safety plans, SDO activities planning, etc.

#### **2.1.4 Guidelines for safe design and operation of LH2 infrastructure (leader AL)**

The guidelines underpin the inherently safer design and operation of LH2 systems and infrastructure, addressing the areas where specific RCS have not been established yet or where they are not suitable for use in public space. The innovative strategies and engineering solutions developed during the project will be included in the guidelines following a structure and format resembling established standards, such as the ISO/TR 15916:2015 “Basic considerations for the safety of hydrogen systems”, etc. The preparation and development of guidelines is led by AL. Active contribution of relevant SDOs is expected either through its members in the PRESLHY consortium or through Advisory Board members. The table of content will be agreed in M14 (milestone MS6.2). The project meetings will include the progress of the guidelines in the standing agenda. Completion of guidelines is planned in M35. Several dissemination channels will be employed, among them:

## D6.6 Plan for the Dissemination, Communication and Exploitation

- PRESLHY website: the deliverable D6.2 “Guidelines for safe design and operation of LH2 infrastructure” will be available on the project website as public report.
- Project dissemination conference: the guidelines will be presented to stakeholders at the dissemination conference envisaged in M36.
- Annual joint meetings of the consortium with SDOs and the Advisory Board.

The stakeholders benefiting by the guidelines development will be primarily engineers from hydrogen industry involved in design, construction, operation and maintenance of LH2 systems and infrastructure. However, the guidelines will be publicly available on the project website, extending the range of possible users.

### **2.1.5 Recommendations for RCS (leader AL)**

The relevant part of guidelines developed at the previous point, including the engineering correlations, will be extracted and expressed in concise language for use by SDOs (recommendations to relevant RCS). The preparation of recommendations for RCS is led by AL. The content will be shaped by the partners participating in the work of regulators and SDOs and consultation with the Advisory Board. The draft of recommendations will be prepared in M28, whereas the Deliverable D6.3 “Recommendations for RCS” will be completed in M35. The dissemination channels will include:

- Project dissemination conference: the recommendation for RCS will be presented to stakeholders at the dissemination conference envisaged in M36.
- PRESLHY website: the deliverable D6.3 “Recommendations for RCS” will be available on the project website as public report.
- Meetings with SDOs: the recommendations will be presented and promoted at the meetings of relevant SDOs, such as CEN/CLC Technical Committee 6 “Hydrogen in energy systems”, ISO Technical Committee 197 “Hydrogen technologies”, etc.

### **2.1.6 White Paper on the use of LH2 (leader KIT)**

The White Paper has the aim to analyse and report the role and potential benefits of LH2 systems and infrastructure deployment in the FCH sector, particularly with regards to the mobility sector. The report will address some aspects of general economics and safety of LH2, paying attention to comparisons with CGH2 systems to highlight LH2 advantages where relevant. The White Paper is considered as one of the major dissemination tools to impact policy making process and influence the development and spread of FCH technology employing liquid or cryo-compressed hydrogen. The table of content of the White Paper will be agreed in M18 (milestone MS6.3). The development process of the White Paper will be led by KIT and the corresponding Deliverable (D6.4) will be ready in M35. The target groups of the White Paper are multiple and varied, as well as the dissemination channels:

- Project dissemination conference: the White Paper will be presented to stakeholders at the dissemination conference envisaged in M36.
- PRESLHY website: the deliverable D6.4 “White Paper” will be available on the project website as public report.
- Printed report: paper copies of the White Paper will be distributed to a wide range of stakeholders, including decision makers and politicians, e.g. through conferences, exhibitions, etc.

## 2.2 Target groups

Dissemination and exploitation of the project outcomes will address multiple audiences, including governmental institutions, Hydrogen Europe (HE) and Hydrogen Europe Research (HER) members, relevant academia and research organisations, the public, etc. The description of the potential users includes the communication and dissemination channels deemed most efficient for the respective impact and interaction. The targeted audience includes but is not limited to:

- Project partners: a continuous and intense internal communication will be maintained about the project progress and activities to assure that each partner is updated on the project status and details of findings. The primary channels will be email communications, project meetings and teleconferences, project website, etc.
- The project Advisory Board is constantly updated on the project progress and results. Continuous consultation with the Advisory Board assures the alignment of the project aims to industry and SDOs views and needs, along with the achievement of the maximum impact on research community. Members of the advisory board are invited to project meetings and stakeholder's workshops to exchange knowledge and expertise.
- Academia: PRESLHY project will significantly contribute to the production of unique experimental data, analytical and numerical models, etc. Dissemination of the generated knowledge to the scientific community is planned through publications in peer-reviewed journals, publications in the proceedings and presentations at international conferences such as International Conference on Hydrogen Energy (ICHS), International Seminar on Fire and Explosion Hazards (ISFEH), International Symposium on Hazards, Prevention and Mitigation of Industrial Explosions (ISHPMIE) etc., workshops, poster displays at seminars and exhibitions, etc.
- European institutions, FCH JU, public authorities at a national and local level which include politicians, decision makers, etc. One of the main dissemination channels for this audience will be the project website and produced deliverables, the White Paper, etc.
- Relevant SDOs and industry will be the primary user of the guidelines and recommendations for RCS developed in WP6. The advisory board includes members of SDOs and industry, assuring a continuous interaction between the two bodies and the project partners.
- Education and training institutions.
- Public engagement is crucial to promote the public acceptance of LH2 and/or cryo-compressed FCH technologies. This audience does not generally need a detailed knowledge of the state-of-the-art, project progression and outputs. Public will be mainly addressed through the project website, distribution of flyers and newsletters, open access to project publications, chapter on LH2 safety for the Handbook, etc.

## 2.3 Dissemination channels

Several methods and channels are used to disseminate the project outputs, according to the targeted audience. First, the project visual identity was defined through the project logo shown in Figure 3.



Figure 3. Project logo.

As a part of the project visual identity definition, a template for power point presentations and deliverables was developed, to assure a uniform and recognizable reporting of the project outputs (see Figure 4).



Figure 4. Presentation template.

### 2.3.1 Project website

The project website is the main platform for public dissemination of the project’s progress, deliverables, events, etc. The website is used as well as a tool for the project management and reporting among the partners of the consortium. The set-up of the website included the “development of the structure and design of document repositories, database repositories and upload areas, coding and testing of the prototypes and of the core components, including emailing, user management etc. Setup of internally accessible prototypical website composed of internal and external domain, testing and finally going public” (Grant Agreement). The promotional material developed during the project, like a project flyer

and a newsletter, will be made available through the website too. The website was developed and established by KIT in M3. The website follows a structure as below:

“**Homepage**” provides an overview of the project, including its framework and mission. The homepage is shown in Figure 5 and it gives access to the other sections of the website.

“**News**” is the section where the updates and information about the project work and achievements, events and meetings involving the project, etc. are regularly published.

“**Project overview**” addresses a more detailed description of the project aim and objectives.

“**Consortium**” presents the list of partners forming the project consortium.

“**Management structure**” shows the structure of the project assembly, presenting the main interactions among the coordination committee, work packages and their leaders, and the advisory board.

“**Work packages**” introduces the six work packages and corresponding objectives.

“**Deliverables**” contains the list of the deliverables and milestones. The reports with a public dissemination level will be here available.

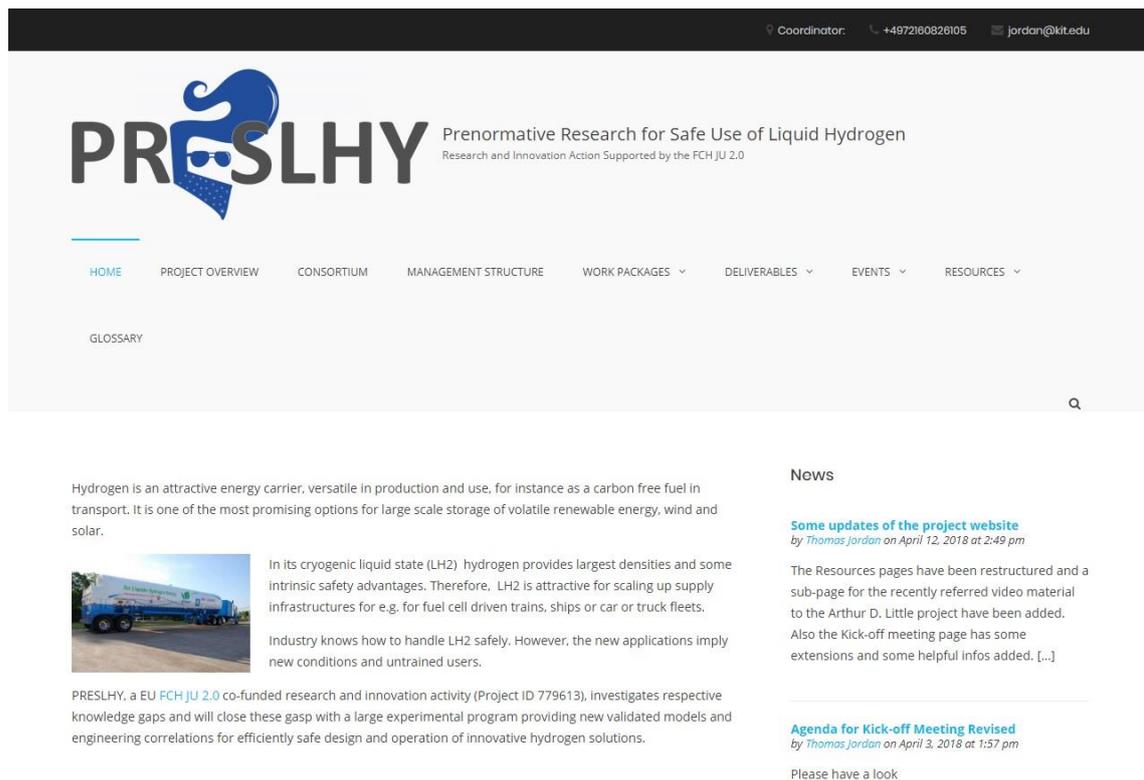
“**Events**” section has a twofold function: firstly, it announces the upcoming events, including project meetings, workshops, etc., to both project partners and interested stakeholders. Secondly, it functions as database of the information and resources related to concluded events, such as the material of the 1<sup>st</sup> workshop on optical and electrostatic measurement techniques held in Karlsruhe on 19 April 2018.

“**Resources**” gives access to:

- database of online resources, bibliography and material related to safety of cryo-compressed and liquid hydrogen;
- proposal application documents, report and presentation templates for dissemination;
- Regulation Codes and Standards of cryo-compressed and liquid hydrogen systems, including both international and national standards, codes and guidelines;
- gallery of interesting video material on liquid hydrogen safety tests and hydrogen technology.

“**Glossary**” presents a list of definitions of the key words and terms associated to PRESLHY project.

A protected area was created with access granted only to consortium partners. This section allows to share documents and information which are not aimed to a public dissemination or are in preparation, such as for deliverables drafts.



**Figure 5. Homepage of project website www.preslhy.eu.**

### 2.3.2 Flyer

The promotional material is expected to include a project flyer to be printed and distributed at several dissemination events. A version in electronic format will be circulated to relevant stakeholders. The flyer is envisaged to provide description of the project and key outputs.

### 2.3.3 Newsletter

The newsletter is anticipated to be prepared and circulated in electronic format. It will include a presentation of the project along with the key results and progresses achieved up to date. The newsletter will be distributed to the contacts of HYSAFE and other partners of the project, widely spreading the project news.

### 2.3.4 Posters

Posters will be displayed at dissemination events, such as exhibitions, conferences, etc., to advertise the project. The poster contains information on the motivation and the objectives of the project, the employed approach, experiments and results. The poster can be updated with key outputs throughout the duration of the project.

### 2.3.5 Workshops

Workshops dedicated to special measurement technologies, experimental or numerical procedures and tools will be organised by the hosts of each project meeting, with support of all the work package leaders and coordinator. The plan includes 8 workshops, 6 of them internal and 2 open. The workshops aim to the *“information exchange across the work packages WP3 to WP5 boundaries, educate and train involved academic and technical staff, support exchange of tools, knowledge and expertise, and promote deeper cooperation*

*in general, improve the quality of the work and provide added value to all involved parties”* (Grant Agreement).

The workshops are organized in conjunction with the project meetings, to assure partners and advisory board members presence. The list of the workshops, along with the topic and host is given in Table 1.

**Table 1 List of meetings and workshops for internal and external information exchange**

<b>Date (Project Month)</b>	<b>Meetings / Venue</b>	<b>Host / Organiser</b>	<b>Workshop Topic</b>	<b>Completed</b>
4	<b>Kick-off Meeting</b> (1st Project Meeting) Karlsruhe, Germany	KIT	<i>Optical Measurement and Electrostatics</i>	✓
9	<b>Initial Workshop</b> Buxton, UK	HSL	<i>Research Priorities Workshop on LH2</i>	
10	<b>2<sup>nd</sup> Project Meeting</b> Paris, France	Air Liquide/ INERIS	<i>Cryo-Techniques</i>	
14	<b>3<sup>rd</sup> Project Meeting</b> Buxton, UK	HSL	<i>P,T, flow measurement</i>	
21	<b>4<sup>th</sup> Project Meeting</b> <i>to be defined</i>	HYSAFE/ SNL	<i>Two phase measurements</i>	
26	<b>5<sup>th</sup> Project Meeting</b> Athens, Greece	NCSR	<i>Numerical Tools, CFD and Risk Assessment</i>	
33	<b>Dissemination Workshop</b> Brussels, Belgium	HYSAFE	<i>Dissemination Workshop</i>	
35	<b>Final Project Meeting</b> Belfast, UK	UU	<i>International Standardisation</i>	

The first workshop, entitled “**Optical and electrostatic measurement**”, was held on April 19, 2018 in KIT facilities in Karlsruhe, Germany. The session was chaired by Ernie Reinecke (HySafe). The participants to the workshop were members of the consortium and advisory board for a total of approximately 25 attendees. The workshop was dedicated to current optical measurement technologies for cryo and/or liquid hydrogen releases and investigations on electrostatic effects. The agenda of the workshops included the following presentations (speaker indicated as first listed name):

- How to see and quantify hydrogen concentration (and cryogenic hydrogen) using optical diagnostics – Ethan S. Hecht, Bikram Roy Chowdhury, Scott Bisson, Anthony McDaniel (Sandia National Laboratories).
- Development of Background Oriented Schlieren methods for multi-phase objects – Natalie Kotchourko (CoStudyGmbH), Thomas Jordan (KIT).
- Shadowgraphy – Joachim Grune (Pro-Science).
- Electrostatic ignition hazards – Benno Weinberger (INERIS).
- Electrostatic measurements – Philip Hooker (HSL).

- Electrostatic measurements around a cryo-jet – Gottfried Necker (Pro-Science).

All the presentations and material of the workshop are available on the project website in the events section.

### 2.3.6 Conferences

The Dissemination Conference will be held either at one of the partners locations or FCH JU facilities in Brussels. Organisation is assigned to UU. The dissemination conference is the culmination event of the project; therefore, it will be organised close to its end, preferably in M36. A duration of 1 or maximum 2 days is considered and attendance of about 100 stakeholders is envisaged. The organisation will aim at including invited speakers from outside the consortium and at participation of collaborators and experts from and beyond Europe. This is thought to increase the impact of the project outputs on the international community working in the field of hydrogen technologies. As stated in the Grant Agreement, the conference programme will include presentations of the PRESLHY key results, including the Handbook chapter on LH2 safety (D6.1), Guidelines for safe design and operation of LH2 infrastructure (D6.2), Recommendations for RCS (D6.3), Engineering tools (D6.4), etc. The brochure and preliminary programme of the dissemination conference will be prepared in M22 (milestone MS28), so that the conference can be advertised at least 12 months before the event.

Participation to other conferences will be used to disseminate the project results. The International Conference on Hydrogen Safety (ICHS) organised by International Association for Hydrogen Safety (IA HySafe) provides a relevant platform for presenting and discussing the results and achievement of the project. The ICHS is planned for September 2019. Further conferences taken in consideration for dissemination of project findings include but are not limited to:

- European Hydrogen Energy Conference.
- International Seminar on Fire and Explosion Hazards.
- International Symposium on Prevention and Mitigation of Industrial Explosions.
- World Hydrogen Energy Conference.
- World Hydrogen Technologies Convention, etc.

### 2.3.7 International meetings and events

The extensive dissemination of the project outputs includes also participation to international meetings as the ones organised by relevant SDOs to present and motivate the recommendations for RCS developed during the project, IEA meetings to present the main developments and achievements of the project, etc. A non-exhaustive list is given below:

- Meetings of IEA HIA Task 37 Hydrogen Safety.
- Meetings of ISO/TC 197 Hydrogen Technologies.
- Meetings of CEN/CLC/TC 6 Hydrogen in Energy Systems.
- Meetings of European Panel of Hydrogen Safety.
- Meetings of UN GTR#13 IWG SGS.
- Research Priorities in Hydrogen Safety Workshops organised by IA HySafe, 2018 and 2020.
- FCH JU Review Days.
- European School on Hydrogen Safety, etc.

### 2.3.8 Scientific publications

Scientific publications in peer-reviewed journals, such as the International Journal of Hydrogen Energy, will be the main channel for disseminating the knowledge generated by the project to the scientific community, along with presentations at the conferences mentioned above. Scientific conference contributions and papers for peer-reviewed journals resulting from the project will report the acknowledgement as stated in the Grant Agreement: “This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under the European Union’s Horizon 2020 research and innovation programme under grant agreement No 779613”.

### 2.4 Time plan and responsibility

The timeline for the dissemination and exploitation activities has been defined during the project preparation and it is given in Table 2, along with the belonging task, responsible body and current status.

**Table 2. Dissemination and exploitation time plan and responsibilities.**

D/MS	Title	Task	Lead	Due	Done
D1.2	Website including internal communication tools	1.4	KIT	M3	✓
D1.3	Data Management Plan 1st Version	1.2	KIT	M6	
MS25	ToC of Handbook of Hydrogen Safety: chapter on LH2 safety	6.1	UU	M12	
D6.1	Handbook of Hydrogen Safety: chapter on LH2 safety	6.1	HySafe	M34	
MS26	ToC of Guidelines for safe design and operation of LH2 infrastructure	6.2	UU	M14	
D6.2	Guidelines for safe design and operation of LH2 infrastructures	6.2	AL	M35	
MS30	Discussion draft of recommendations for RCS	6.3	UU	M28	
D6.3	Recommendations for RCS	6.3	AL	M35	
MS27	ToC of White paper	6.5	UU	M18	
D6.4	White Paper	6.5	KIT	M35	
MS29	Detailed description of novel engineering tools for LH2 Version 1	6.4	UU	M24	
D6.5	Detailed description of novel engineering tools for LH2 safety	6.4	UU	M35	
D6.6	<i>Plan for the dissemination, communication and exploitation</i>	6.6	UU	M6	
D6.7	Plan for the dissemination, communication and exploitation-1st update	6.6	UU	M18	
MS28	Brochure and preliminary programme of the dissemination conference	6.6	UU	M22	
D6.8	Plan for the dissemination, communication and exploitation-2nd update	6.6	UU	M36	
D6.9	Report on the communication activities carried out to the general public	6.6	UU	M36	

### 3 Communication activities

The communication activities aim at assuring an efficient interaction between the project partners and effective promotion of the project to the targeted audiences. The plan timing covers the entire project duration.

#### 3.1 Internal communication

Effective communication inside the consortium is fundamental for the success of the project. All partners must be updated continuously on project progress, deliverables status and planning, etc. Typical communication means inside the consortium are emails, the project website protected area with document repositories, collaborative document processing, virtual and real meetings. Two project meetings per year are organised at different partners locations. List of the meetings is given in Table 1. The meetings are used to report the progress of the project deliverables and outputs, discuss project further steps and developments, and exchange knowledge and expertise through concomitant workshops, see section 2.3.5. The kick-off meeting was held in Karlsruhe, Germany (16-20 April 2018). Additional meetings were organised on demand through electronic means.

#### 3.2 External communication

The free online access to the project outputs through the website will be a key element for spreading the generated knowledge ([www.preslhy.eu](http://www.preslhy.eu)). Relevant project events and news will be advertised through the IA HySafe website ([www.hysafe.org](http://www.hysafe.org)), which counted >9000 visits during the last trimester.

PRESLHY dissemination conference represents a crucial activity for communicating the project outputs to the relevant stakeholders (M36, see section 2.3.6 for detailed description).

Further communication and promotion of the project to the multiple audiences identified in section 2.2 will include but not limit to:

- Advisory Board, which is composed by representatives of relevant industry and SDOs, connecting the consortium to the stakeholders worldwide.
- International meetings organised by relevant SDOs and RCS committees for discussion and promotion of Recommendation for RCSs (see section 3.3.7).
- International conferences, such as the International Conference on Hydrogen Safety (2019), etc. (see section 3.3.6).
- Scientific publications in peer-reviewed journals to outreach the research community, implementing an open access policy to engage a wider audience.
- Biannual meetings of International Energy Agency (IEA) Hydrogen Implementation Agreement (HIA) Task 37 Hydrogen Safety meetings to systematically present and discuss the results of the performed research.
- European School on Hydrogen Safety.
- Relevant Continuous Professional Development (CPD) courses.
- IA HySafe Research Priorities Workshop.
- PRESLHY newsletter and press-releases.

### 4 Sustainability

The plan is arranged to support visibility and availability of the major project outcomes for at least 5 years after the project formal end. The main efforts will be spent on maintaining

the handbook chapter and web contents, such as the deliverables produced throughout the project duration. The long-term basis availability of PRESLHY experimental data is envisaged through storage in digital format on provided databases. Details can be found in the “Data Management Plan” (see deliverable D1.3 “Data Management Plan 1st Version”, WP1). HYSAFE presence among the project partners enhances the sustainability of the PRESLHY results, and maximization of the impact and outreach of this pre-normative research project, thanks to its unique open network, neutral position and involvement in relevant activities –including but not limited to the ICHS, Research Priorities Workshops, educational events and the European Hydrogen Safety Panel.