Metrology for Advanced Hydrogen Storage Solutions

Dissemination of project results towards international standards and committees

Project	19ENG03 MefHySto
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Dissemination level:					
	PU	Public		**RE**	Restricted to a group specified by the consortium
	PP	Restricted to other programme participants		**CO**	Confidential, only for members of the consortium*

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Document history

Version	Date	Description
V1	28.11.2023	First Draft
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Table of Contents

Executive Summary

The project's Task A6.1.8 focused on dissemination efforts to ensure a wide-reaching impact of its findings. Engagement targeted influential bodies including ISO/TC 197, IEC/TC 105, ISO/TC 158, CEN/TC 234, and more, aiming to introduce project outputs into committee discussions. These efforts involved requesting agenda time, delivering presentations, and providing written reports where possible.

The project contributed insights to IEC/TC 105's revision of fuel cell technologies. Presentations were also provided to CEN/TC 234, CEN/CENELEC JTC 6, ISO/TC 193, EURAMET TC-T and TC-MC, BIPM CCQM, DIN-NA 062-95-73, among others. Despite proactive efforts, certain groups, such as ISO TC 158/197's Joint Working Group 7 or CEN/TC 268's Working Group 5 on Specific Hydrogen Technologies, were dormant or not further prioritized, limiting further dissemination activities. However, with DIN NA 062-95-73 and EMN Energy Gases, project results have been disseminated in committees that were not originally planned. Hence, the project made substantial efforts and succeeded to disseminate its findings across influential committees and bodies.

1 Introduction

The work in task A6.1.8 aimed for comprehensive dissemination to ensure the broad reach and potential impact of the projects findings. Recognizing the significance of aligning with key standards bodies and committees, the project aimed to engage actively with the following entities and bodies:

- ISO/TC 197 WG 27 and WG 28,
- IEC/TC 105,
- ISO/TC 158/JWG 7,
- ISO/TC 197,
- CEN/TC 234 CEN/CENELEC/JTC 6,
- ISO/TC 158,
- ISO/TC 193,
- CEN/CENELEC Sector Forum Energy Management / WG Hydrogen,
- CEN/TC 268 W G5,
- EURAMET TC-T and TC-MC,
- BIPM CCQM,
- and CCT

The focus laid on initiating collaborative efforts among the consortium, jointly requesting chairpersons to allocate time in committee or WG agendas to introduce and discuss the project's outputs. Additionally, where appropriate, written reports were prepared, intended for consideration by the respective committees or WGs. A web meeting was held on 23 March 2023 for coordination purposes, which was attended by representatives of the relevant project partners.

2 Dissemination activities

Throughout the course of the project, efforts were made to disseminate the project's outcomes across various committees and working groups. The conducted dissemination activities are listed in Table 1.

Presentations were made available to ISO/TC 158 on the analysis of gases, notably delivered to members on April 6, 2023, by Dr. Michael Maiwald from BAM.

The consortium engaged with ISO/TC 197, specifically targeting Working Groups 27 and 28 centred on hydrogen fuel and hydrogen quality control. Despite their presence at the targeted meetings in Oslo on 13th and 14th June, the MefHySto project did not find space for presentation or inclusion.

Efforts further encompassed IEC/TC 105 on Fuel Cell Technologies, contributing ongoing insights to the revision of TS-62282-7-1. The MefHySto project findings were contributed by NPL to the revision of TS-62282-7-1 “Fuel cell technologies – Part 7-1: Test methods – Single cell performance tests for polymer electrolyte fuel cells (PEFC)” in WG 103.

Engagement with CEN/TC 234 on Gas Infrastructure involved the presentation of project insights to the committee members on April 14, also conducted by Michael Maiwald. Similarly, the CEN/CENELEC JTC 6 meeting in Brussels on June 8 saw a presentation by Dr. Michael Maiwald, informing the committee on hydrogen in energy systems.

The project also targeted ISO/TC 193 on Natural Gas, offering presentations to subcommittees SC1/WG 25 and TG1 on analysis of natural gas and hydrogen, made available to members on April 6, 2023, again presented by Dr. Michael Maiwald.

EURAMET engagement occurred within TC-T (Thermometry) and TC-MC (Metrology in Chemistry), with presentations conducted by Stephanie Bell on April 20 and Heinrich Kipphardt on January 31, respectively. In addition, EMN Energy Gases was addressed during a presentation in Lisbon on March 22 by Dr. Michael Maiwald.

Presentations extended to influential international entities such as BIPM's CCQM and CCT. Heinrich Kipphardt delivered an online presentation on Green Hydrogen during the CCQM meeting on October 12. However, CCT had no meetings scheduled until 2024, leaving no immediate avenue for presentation.

Technical Committee of ISO TC 158/197's Joint Working Group 7 is currently dormant so that there were no further dissemination activities planned.

The project also engaged with DIN-NA 062-95-73, focusing on Gas Analysis and Gas Quality, where regular meetings informed the committee, led by Heinrich Kipphardt as the Chairman.

Finally, efforts directed at CEN/TC 268's Working Group 5 on Specific Hydrogen Technologies Applications, unfortunately, did not prioritize the inclusion of the MefHySto project findings.

Table 1: Task A6.1.8 Dissemination of results towards standards bodies and committees

Committee		Responsibility	Targeted Meeting	Final
ISO/TC 197 Hydrogen Technologies	WG 27 H_2 Fuel	NPL	13/14 June in Oslo	Representative were in targeted meeting but there was no room for MefHySto project
	WG 28 Hydrogen Quality Control	NPL	13/14 June in Oslo	
ISO TC 158/197	JWG 7 Analysis of Gases	NPL	TC currently dormant	
ISO/TC 158 Analysis of Gases		BAM		Presentation made available to TC members on 6 April 2023 by Michael Maiwald
IEC/TC 105 Fuel Cell Technologies		NPL	Ongoing NPL contribution to the revision of TS-62282-7-1 “Fuel cell technologies – Part 7-1: Test methods – Single cell performance tests for polymer electrolyte fuel cells (PEFC)” in WG 103 also considering results from MefHySto project	
CEN/TC 234 Gas Infrastructure		DVGW		Presentation made available to TC members on 14 April by Michael Maiwald
CEN/CENELEC JTC 6 Hydrogen in Energy Systems		DVGW/NPL	8 June in Brussels	Committee was informed via presentation in targeted meeting by Michael Maiwald
ISO/TC 193 Natural Gas		BAM		Presentation made available to TC members on 6 April 2023 (SC1/WG 25 Analysis of Natural Gas and TG1 Hydrogen) by Michael Maiwald
CEN/CENELEC Sector Forum Energy Management	WG Hydrogen	NPL		was not prioritized
EURAMET	TC-T (Thermometry)	NPL/PTB/CMI	20 April	Committee was informed via presentation in targeted meeting by Stephanie Bell
	TC-MC (Metrology in Chemistry)	NPL/PTB/CMI		Presentation made available to TC members on 31 January by Heinrich Kipphardt
EMN Energy Gases		-	22 March in Lisbon	Committee was informed via presentation in targeted meeting by Michael Maiwald
BIPM	CCQM	NPL/PTB	12 October in Montevideo	Online presentation by Heinrich Kipphardt in the Workshop on Green Hydrogen in connection with CCQM meeting
	CCT	NPL/PTB	No meeting until 2024	
DIN-NA 062-95-73	AA Gasanalyse und Gasbeschaffenheit	BAM	30 March	Committee was informed in regular meetings by Heinrich Kipphardt (Chairman of this group)
CEN/TC 268 Cryogenic vessels and H_2 technologies applications	WG 5 Specific Hydrogen Techn. Applications	NPL		was not prioritized

3 Conclusion

In conclusion, the project has made efforts in disseminating its findings to several prominent standards bodies and committees, facilitating engagement and knowledge-sharing across various targeted meetings. Despite some constraints and dormant committee statuses, the project demonstrated significant engagement with multiple entities.

Looking ahead and given that the project partners are already partly active participants in these committees, their continued presence provides a significant advantage. Their established presence not only ensures ongoing engagement but also offers a continuous channel for reporting and sharing the project's outcomes and experiences even after the project end.