



## CLEAN HYDROGEN JU AEMEL PROJECT FINDINGS & JRC ELECTROLYSER DEGRADATION “2 IN 1” WORKSHOP

29<sup>th</sup> September 2023

Venue: Common Meeting Room 4 on the 1<sup>st</sup> floor White Atrium

Avenue de la Toison d’Or 56-60 – BE 1060 Brussels

ZOOM or TEAMS LINK for attendants not in presence with registration.

A link for those attending the Workshop online is available below.

8:30 - 9.00	Registration and welcome
<b>SESSION 1: OVERVIEW OF AEM ELECTROLYSIS PROJECTS (moderated by Nikolaos LYMPEROPOULOS)</b>	
9.00 – 9:15	Overview of the CLEAN HYDROGEN JU ELECTROLYSIS PROGRAM (Nikolaos LYMPEROPOULOS)
9:15 – 9.30	ANIONE PROJECT (coordinator) 10 min presentation + Q&A – Antonino Aricò CNR
9.30 – 9.45	CHANNEL PROJECT (coordinator) 10 min presentation+ Q&A – Luis Colmenares-Rausseo SINTEF - <i>In Remote</i>
9.45 –10:00	NEWELY PROJECT (coordinator) 10 min presentation + Q&A – Aldo Gago DLR
10.00-10.15	PROPULS - Ulrich Wilhelm Rost (partner NEWELY project) –
10.15-10.30	ENAPTER – Lorenzo Giobbi (partner CHANNEL project) – <i>In Remote</i>
10:30-10.45	CUMMINS-HYDROGENICS - Sebastiaan Herregods / Lisa Geerts – (partner ANIONE project)
10.45 – 11.00	Coffee break
<b>SESSION 2: LOW TEMPERATURE ELECTROLYSER DEGRADATION PHENOMENA AND TEST METHODOLOGY (moderated by Thomas Malkow)</b>	
11.00 – 11.30	Harmonization protocols, electrolyser durability and AST - Thomas Malkow – JRC EUROPEAN COMMISSION - 20 min presentation and 10 min Q&A
11.30 – 11.45	Pierre Millet – PARIS-SACLAY UNIVERSITY - PEM ELECTROLYSIS
11.45 – 12.00	Peter Bouwman SCHAEFFLER – PEM ELECTROLYSIS
12:00-12:15	Frédéric Fouda-Onana – CEA – AEM ELECTROLYSIS (NEWELY Project) – <i>In Remote</i>
12:15-12:30	Laura Abadía - FHa -Fundación Hidrógeno Aragón- Alkaline electrolysis (project HYPRAEL)
12:30-12:45	Stefania Siracusano CNR- Accelerated stress test in PEM electrolysis – (NEPTUNE Project)
12:45 -13:00	Felix Lohmann-Richters/Magdalena Müller, Degradation and dynamic testing in AEL and AEM, FZJ/SINTEF(NTNU) (CHANNEL project plus additional FZJ experience with AEL)
13:00 -13:15	Johan Buurma - Accelerated stress test of PEMWE components, towards a component specific approach - TNO
13:15 -14:30	Light lunch
<b>SESSION 3: ROUNDTABLE DISCUSSION ON ELECTROLYSER DEGRADATION PHENOMENA, and TEST METHODOLOGY including AST PROTOCOLS (moderated by Thomas Malkow)</b>	
14:30- 15:45	All speakers from the previous sessions will be first involved in the discussion by asking them a specific question each (see below): for each question after the answer by invited speaker, the public can make answers, comments and suggestions. QUESTIONS FROM JRC <ul style="list-style-type: none"> <li>Can the MEA test methodologies including AST protocols developed and applied in the projects or elsewhere proposed be readily transferred to stacks used in systems for real-world applications and if not, what has to change, why and how for a realistic and accurate assessment of stack performance/lifetime degradation?</li> </ul>

	<ul style="list-style-type: none"> <li>• What are the stressors (individual and combined) for stacks likely to be relevant in a system context under real-world operating conditions (normal and abnormal) and their permissible parameter ranges when subjected to supposedly act on the stacks to affect their performance degradation significantly while aiming at much shortened test durations for stack AST?</li> <li>• What test methodologies need to include (or exclude) for their potential use by academia and industry alike to allow as far as possible for a system-independent assessment of performance/lifetime degradation of stacks?</li> <li>• Do the present day challenges of (modern) electrolysers especially the need for PGM reduction, use of non-CRM, iridium scarcity and PFAS impact the assessment of performance/lifetime degradation of stacks and if so, how should test methodologies to remain relevant in the future adequately account for addressed challenges?</li> <li>• Are stack ALT necessary/useful/beneficial for complementing stack AST regarding each of the three major low-temperature water electrolyser technologies?</li> </ul>
15:45– 16:00	Wrap up and conclusions

**Link for participation in remote**

[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_MGM5MGNiOGYtNTFmNy00Zjc0LWFiYjQtYTNhNTA4Y2M5OWFk%40thread.v2/0?context=%7b%22Tid%22%3a%22b85b8f69-2207-44c9-b41b-470956de6233%22%2c%22Oid%22%3a%220e71ac64-8831-4cf3-b343-93e54eff4c62%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MGM5MGNiOGYtNTFmNy00Zjc0LWFiYjQtYTNhNTA4Y2M5OWFk%40thread.v2/0?context=%7b%22Tid%22%3a%22b85b8f69-2207-44c9-b41b-470956de6233%22%2c%22Oid%22%3a%220e71ac64-8831-4cf3-b343-93e54eff4c62%22%7d)