

LoCEL Horizons

Welcome to the December 2025 edition of the LoCEL-H₂ newsletter, which highlights activity across the consortium including recent awards and achievements, participation in conferences, webinar sessions, and new research publications. This issue also features updates from the latest project review meeting, and looks ahead to upcoming consortium activities as the project continues to progress.

THE CONSORTIUM IN ACTION

Loughborough Team Driving Innovation in Hydrogen

The past six months have been nothing short of **remarkable** for the Loughborough University team, whose pioneering work on the **LoCEL-H₂ battery-electrolyser system** continues to make waves across the hydrogen energy sector.

In July 2025, they showcased the battery-electrolyser system at the **All-Party Parliamentary Group on Hydrogen's Business Fair** at the UK Parliament. This event provided an excellent opportunity to engage with policymakers and industry leaders, demonstrating how the technology can support global hydrogen ambitions.

Over the summer, the group participated in the **Royal Society Summer Exhibition** at **Jodrell Bank**, home to the UK's largest radio telescope. The stand attracted visitors of all ages, sparking strong interest in renewable energy and hydrogen technologies.



Reflecting on the event, **Dr Elizabeth Ashton** said: "It was brilliant to see so much enthusiasm for science and renewable energy, from curious youngsters to students already planning further education in science, technology, and engineering disciplines. For me, it was particularly inspiring to see so many young girls excited about hydrogen energy technologies. They engaged with our 'Molymod' kits to create new molecules and asked fantastic questions like 'Is hydrogen safe?', 'How does electricity exist?', and 'Will hydrogen power our future?' People also loved exploring our battery-electrolyser system through the VR headset, a massive hit and a great way to bring our research to life."

Shortly after, the team attended the **Cenex Expo**, a key event for low-carbon transport and hydrogen innovation. **Dr Paul Holland** and **Dr Elizabeth Ashton** shared updates on the LoCEL-H₂ project and explored the latest developments in Connected and Autonomous Mobility (CAM), clean transportation, and the journey to net zero.



Dr Paul Holland, Professor of Hydrogen Metrology at **Loughborough University**, summarised: “It was great to attend the Cenex Expo and see the latest innovation in hydrogen and low carbon vehicles. We took a battery electrolyser cell and it was great to network with people and share our progress with projects at Loughborough University”.

The group’s efforts were recognised at **The Hydrogen Conference** at Aston University, where they received the **Hydrogen Award for Outstanding International Impact**. The award was presented by Professor Kevin Kendall, following Dr Elizabeth Ashton’s talk titled ‘Rethinking Lead-Acid Batteries for Low-Cost Green Hydrogen Production.’

Later in October, the team took part in the **East Midlands Hydrogen Summit**, where **Dr Ashton** delivered a presentation on LoCEL-H₂ technology to regional leaders, industry innovators, and policymakers. She reflected: “It was fantastic to join regional leaders, industry innovators, and policymakers to celebrate the momentum building around clean hydrogen in the East Midlands, a leader in the UK’s energy transition.”

Back on site at **Loughborough**, the group successfully completed and tested the latest containerised battery–electrolyser system, including a practical demonstration using a **hydrogen-powered stove**. The much-anticipated ‘bacon sandwich test’ was a success, marking another important milestone for the project.



Finally, to top off the year, the group received the prestigious **Stewart Dow Memorial Award** at the **Hydrogen Scotland Conference 2025**. Stewart Dow, a leading figure at BOC UK & Ireland, championed practical hydrogen innovation and was a pioneer in commercialising hydrogen fuel cells. The team is proud to receive an award that reflects values he strongly represented: practical solutions, international impact, and collaboration across organisations.

Accepting the award on behalf of **Prof. Dani Strickland** and the team, **Dr John Barton** said: “Just four years ago, we were conducting lab experiments on a cell measuring only 5 cm by 5 cm. Today, we are building full-scale systems in shipping containers, each containing 160 cells and capable of producing 10.42 kWh.”

The past six months have been an exciting period of progress and recognition for the **LoCEL-H₂** project group at **Loughborough University**. We look forward to continuing this momentum as we work towards scaling the project and providing clean, renewable energy to the community.

LoCEL-H₂ project team at the University of Gabès

It has been a busy and productive few weeks for the LoCEL-H₂ project team at the **University of Gabès**.

At the beginning of November, the group presented their research at the **IEEE International Multi-Conference on Smart Systems & Green Process**. Their paper, “Decentralized Energy Management in Residential Microgrids: Simulation and Optimization for Homes Grouped by Proximity”, was authored by **Fatma Ben Youssef, Yassine Ben Salem, Nihel Chekir, Ali Snoussi** and **Houcine Bendaoud**.

Later in the month, the group organised a seminar series entitled “The Decarbonisation of Economic Activities”, during which the LoCEL-H₂ project was discussed in depth with students, researchers and local stakeholders.

We look forward to seeing further events, conferences and publications from the team and to continuing to share the **LoCEL-H₂** message through future events and collaborations.



**10+****Consortium Members**
at the Project Review**100+****Stakeholders reached**
in Côte d'Ivoire & Zambia**620+****Followers**
on our social media**6,000+****Visits to our website**
from 80 countries

LoCEL-H₂ project team at the University of Naples Federico II

The LoCEL-H₂ Project team at **UNINA** have contributed to several major international conferences and events in the past six months. In September, **Prof. Dario Minervini** and **Prof. Ivano Scotti** contributed to two major international conferences on rural energy transitions and social innovation.

At the **European Rural History Organisation (EURHO)** conference in Coimbra, they presented a paper titled: 'Questioning Energy Prosumerism in Marginal Rural Areas. Insights from the Horizon LoCEL-H₂ Project.' Their presentation formed part of the session 'Understanding contemporary rural energy transitions between decarbonisation strategies and localised rural changes', exploring how historical perspectives can inform contemporary **decarbonisation** strategies and local **energy transitions**.

Later in September, the team joined the **European Sociological Association 'Environment and Society' Mid-term and Energy and Society Network Joint Conference**, presenting insights from the LoCEL-H₂ Project case study in **Pakistan** on the social embeddedness of a DC microgrid.

The group's work prompted discussions on energy transitions in the **Global South**, postcolonial challenges, and the role of transdisciplinary approaches in shaping just and sustainable futures. The presentation highlighted not only critical research perspectives but also a shared commitment to defending **humanity and justice** in the face of global crises.



Alongside the conference, team members **Roberta Tofani** and **Alice Palmieri** attended the *Summer School for Early Career Researchers – Methodological Perspectives for Social Research on Energy and Environmental Issues* at Kaunas University of Technology.



Later in October, the project team hosted the **Energy for Africa** workshop, led by **Rosanna De Rosa, Roberta Tofani, Ivano Scotti** and **Prof Dario Minervini**. Together with guests from Benin, the group presented an overview of the LoCEL-H₂ project and shared the key findings generated by UNINA.

The presentations were followed by a wide-ranging discussion on the energy challenges faced in several African countries, and on the importance of **international cooperation** in promoting sustainable access to energy.

The workshop offered a valuable opportunity to exchange knowledge, strengthen collaboration and reflect on the role of research partnerships in advancing clean and reliable energy solutions for communities across the continent. Looking forward to further collaborations!

PROJECT PARTNERS

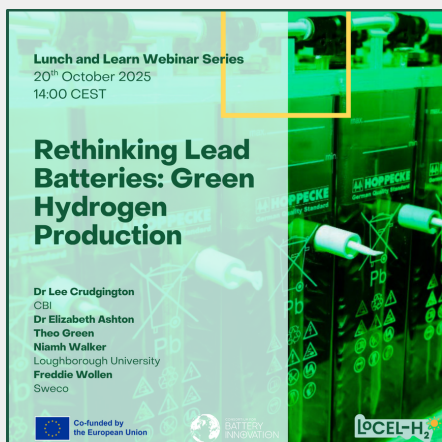


LOCEL-H₂ WEBINAR SERIES

We're excited to share progress from our LoCEL-H₂ Lunch-and-Learn webinar series, which highlights how the project is transforming energy access in local communities.

Rethinking Lead Batteries: Green Hydrogen Production

Our first session in **October** introduced the heart of the LoCEL-H₂ system: the **battery electrolyser**, presented by the team at **Loughborough University**. This innovative technology converts solar-generated electricity into green hydrogen, providing both cooking fuel and electrical power for energy consumers in the community.



The webinar, titled *"Rethinking Lead Batteries: Green Hydrogen Production"*, attracted over 30 participants and sparked lively discussion. **Dr Lizzie Ashton**, Senior Research Associate at Loughborough University, led a deep dive into the system's design and operation, joined by team members **Freddie Wollen**, **Theo Green**, and **Naimh Walker**. Through the 30-minute session, they showcased how this technology is enabling low-cost hydrogen generation for off-grid communities.

Powering Adaptation: Tiered Rural Electrification

In December, our second webinar presented by **Reesha Arshad** of the **Lahore University of Management Sciences (LUMS)** focused on the prosumer microgrid aspect of LoCEL-H₂, which connects energy systems to consumers in the community.

[Click here to learn more](#)



The session explored how improved energy access, guided by the **World Bank's Multi-Tier Framework (MTF)**, can strengthen climate resilience in vulnerable regions. The discussion highlighted the benefits of **decentralized microgrids** and prosumer behaviour, showing how the **LoCEL-H₂ project** contributes to adaptation and sustainable development.

LOCEL-H₂ PROJECT REVIEW MEETING

In late **November**, a majority of 10 of the LoCEL-H₂ Project consortium gathered in Brussels for the **project review meeting**, evaluating our progress and reflecting on how far the project has **progressed** in the past 16 months.

Colleagues from **Hoppecke Batteries**, **RHYDE**, the **University of Gabes**, **Loughborough University**, **CEA-Liten**, **Hollingsworth & Vose**, **Lahore University of Management Sciences**, **University of Naples Federico II** and **Consortium for Battery Innovation (CBI)** joined the meeting, either in person or online, to share updates and discuss next steps with our project officer from the **European Commission Climate, Infrastructure and Environment Executive Agency (CINEA)**.

Hawa Ndao from **RHYDE** summarised the event 'Motivating and inspiring to see all the progress made. It was a meeting full of constructive dialogue, showcasing the consortium's collective commitment'; while **Hassan Khan** from **Lahore University of Management Sciences** commented 'Always wonderful catching up with the LoCEL-H₂ family in person!'.

We are extremely pleased with the project progress to date and took the **opportunity to celebrate** the significant technical and collaborative achievements with all of our partners. The meeting reinforced the **strength** of our **collaboration**, and we look forward to carrying this momentum into the next stage of the project!

