Co-funded by the European Union

Press release

New Clean Energy and Cooking Fuel Solution to Help Solve Energy Poverty for Isolated Communities in Africa

Planning is Underway for LoCEL-H2, a Four-Year, €10million Sustainable Energy Storage Project, Co-funded by the European Union

[LE BOURGET-DU-LAC, February, 2023] – A recently won European Union project by the Consortium for Battery Innovation (CBI) will pair advanced lead batteries with green hydrogen to deliver a new source of clean, reliable, and sustainable energy storage for off-grid communities in Africa.

Awarded through Horizon Europe, this collaborative, four-year project called LoCEL-H2 (or Low-cost, Circular, plug & play, Off-grid Energy for remote Locations including Hydrogen), combines the expertise of lead battery manufacturers, academia, national laboratories, component manufacturers, and companies who are focused on integration, microgrids and renewables.

LoCEL-H2 will generate renewable energy, storage, and fuel for deployment in isolated and remote regions of Africa, to support communities that cannot connect to an electricity grid.

The excitement around this innovative project is reflected by everyone involved," said Dr. Carl Telford, the senior research and innovation manager at CBI. "Energy poverty is a problem that affects millions of people worldwide because they lack consistent access to electricity.

The majority of the world's population living in energy poverty are in Sub-Saharan Africa and are dependent on traditional stoves and fuels for their cooking. As a result, most of the domestic chores are handled by the women in these households, who then develop an increased health risk from a constant exposure to biomass, kerosene and/or coal fuels used for cooking.

Angel Kirchev, a senior expert, PhD, HDR, at CEA Tech and LoCEL-H2's project coordinator holds up a sign during the kick-off meeting showing what this project will mean for off-grid communities in Africa.

The LoCEL-H2 project will provide a sustainable energy source as well as access to clean fuels. Another benefit will result in the education levels within these communities being positively impacted since they will now have access to online information through a reliable energy connection.

"This project is important to help address the United Nations Sustainable Development Goal 7 (Affordable and Clean Energy), while having an impact on other areas such as health," noted Dani Strickland, professor of electrical power engineering at Loughborough University and a member of the LoCEL-H2 partnership.

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This project involves nine partners in Europe, North Africa, North America and South Asia who will develop new technology for a novel distributed microgrid, as well as a Battolyser. The Battolyser is a new solution for producing clean hydrogen technology to power cooking surfaces and would replace biomass fueled stoves.

Whether as a response to climate impacts or future energy storage needs, advanced lead batteries are often an overlooked and innovative technology that bring safe, reliable, low-cost solutions to pair with a renewable source.

By combining lead batteries with wind and solar power, this forward-looking energy storage project will deliver ongoing, affordable electricity to off-grid communities and become a deployable solution for other energy-deprived areas around the globe.

The two pilot areas for the project will be focused in Zambia and Ivory Coast. Angel Kirchev, a senior expert, PhD, HDR, at CEA Tech and LoCEL-H2's project coordinator said, "CEA looks forward to coordinating this exciting and challenging 4-year project which will bring sustainable energy and green hydrogen to challenged communities."

Watch the Project Kick Off video

Project Co-Funded by the European Union

The members of the partnership are CEA, Hoppecke, Hollingsworth & Vose, UNINA, Loughborough University, Sunkofa, University of Gabes, SAS Réseaux Hydrogène Décarboné RHYDE, and LUMS.

About Consortium for Battery Innovation

The Consortium for Battery Innovation (CBI) is the world's only global pre-competitive research organization funding research into lead batteries for energy storage, motive and automotive applications. For more than 25 years, with its global membership of battery manufacturers, industry suppliers, research institutes and universities, CBI has delivered cutting-edge research pushing the boundaries of innovation in lead battery technology, setting the standard for advanced lead batteries and the next generation of energy storage. For more information, visit our website: batteryinnovation.org

About Loughborough University

Loughborough University is the home of world leading engineering, with an international reputation for being at the forefront of technological innovation and for maintaining extensive links with industry. The Wolfson School of Mechanical, Electrical and Manufacturing Engineering is one of the biggest engineering schools of its kind in the UK. The school aims to provide international leadership in research and innovation with a focus on climate change and net zero and has an unrivalled educational experience. Loughborough University is consistently in the top 10 in many university ranking tables for student experience. Learn more at lboro.ac.uk/departments/meme/