The MESCH project

Modular Energy Storage with Clean Hydrogen

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"Sed omnia praeclara tam difficilia quam rara sunt" (Latin)

"Everything worthwhile is as hard as it is rare"

Benedictus de Spinoza ("Ethica" -1678)

WELCOME!

CONSORTIUM FOR BATTERY INNOVATION

TECHNOLOGY FOR TOMORROW





Modular Energy Storage with Clean Hydrogen

Project Number 10084277 Energy Catalyst Round 10 (Mid Stage)





INNOVATE UK – ENERGY CATALYST 10

What is Innovate UK?

Innovate UK is part of UK Research and Innovation – working with the Foreign, Commonwealth and Development Office (FCDO) and the Department for Business, Energy and Industrial Strategy (BEIS) to invest up to £10 million in innovation projects What is Energy Catalyst Round 10?

Energy Catalyst Round 10 is a competition (across 3 stages) that aims to accelerate the innovations needed to create new or improved clean energy access in Sub-Saharan Africa, South Asia or Indo-Pacific regions What is the aim?

Creation of:

- A just and inclusive energy transition
- An extension of the benefits of clean energy to all
- A roadmap to meet the Sustainable Development Goals (SDGs) 7: Affordable and Clean Energy and 13: Climate Action

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MESCH CONSORTIUM

Who are we?





MESCH SDGs

Which Sustainable Development Goals (SDGs) are addressed in the project?



MESCH project addresses the following SDGs:

- SDG3: Good Health and Well-Being
- SDG9: Industry, Innovation and Infrastructure
- SDG13: Climate Action
- SDG17: Partnerships for the goals



MESCH KICK-OFF AND HOSPITAL MoU

May 2024 to July 2024



MESCH project kick-off 13 May 2024 London



MESCH Mwanza hospital MoU signature July 2024 Malawi



MESCH OVERVIEW

What is the focus of this project?



MESCH project focuses on a new form of battery and hydrogen production technology (the battery-electrolyser) within a modularized hybrid energy storage system

The battery-electrolyser both stores electrical power and produces hydrogen using electrolysis.

This state-of-the-art technology has as results:

- low-carbon footprint,
- provision of electricity buffering and
- multi-vector energy storage,
- reliable 24-hour access to electricity and clean fuel by using

low-cost components

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THE LOGO CONCEPT

What is the idea behind the MESCH branding?



BRANDMARK

 H_{2}

The brandmark's composition is informed by the element hydrogen, in its most common gas form, which is used in MESCH technology H₂. The formation of its diatomic molecules also inspires its composition, with atoms captured mid formation, spelling out H₂ in abstract form.

Having a brandmark separate from the wordmark, makes the identity extremely flexible. At smaller scales, which are especially prevalent in the digital space, the brandmark can be used independent from the wordmark and still drive brand recognition.

MESCH



WORDMARK

To convey the credibility of the MESCH project, the wordmark has been set in all caps. The font Degular was selected due to its versatility, clarity, and modern aesthetic. The font's legibility, even at smaller sizes, ensures effective communication of complex information.

Degular's blend of historical influences and contemporary design mirrors MESCH's mission of using advanced technology to address long-standing energy issues.



MESCH COMMUNICATION I

How will the official website of the project look like?





MESCH COMMUNICATION II

Where can you find us in Social Media?





MESCH

A new modular energy solution including green hydrogen. Research & Innovation project funded by Innovate UK (UKRI).



MESCH PURPOSE



* MESCH can be deployed either as part of a new installation, or as an addition to an existing installation



MESCH CASE STUDY: MWANZA (MALAWI)











MESCH APPROACH

How will it look like the installation?

MESCH battery-electrolyzer approach

- Minimises the cost and embodied energy by using the same electrochemical device for electricity storage and hydrogen production
- Improves radically the economics of intermittent hydrogen production





MESCH BATTERY INNOVATION



A Lead Carbon battery is an evolution of the traditional, tried & tested, lead acid technology.

In a Lead Carbon battery: carbon is added to the negative plate which results in a <u>much longer life (MONBAT development)</u>

This project will combine the two technologies to optimise the flow of energy around the hospital.

The combination of battery types allows opportunities for optimisation charge and discharge cycles to avoid partial state of charge where needed for durability enhancement.



MESCH EXPLOITATION

What are the next steps of the product of the project?





ON-SITE STORIES FROM MALAWI



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THANK YOU

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www.batteryinnovation.org

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