The MESCH project

Modular Energy Storage with Clean Hydrogen

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18/09/2024

CONSORTIUM FOR BATTERY INNOVATION

‘’Sed omnia praeclara tam difficilia quam rara sunt” (Latin)

‘’Everything worthwhile is as hard as it is rare‘’

Benedictus de Spinoza (‘’Ethica” -1678)

WELCOME!

MESCH

Modular Energy Storage with Clean Hydrogen

Project Number 10084277
Energy Catalyst Round 10 (Mid Stage)

UKRI Innovate UK

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

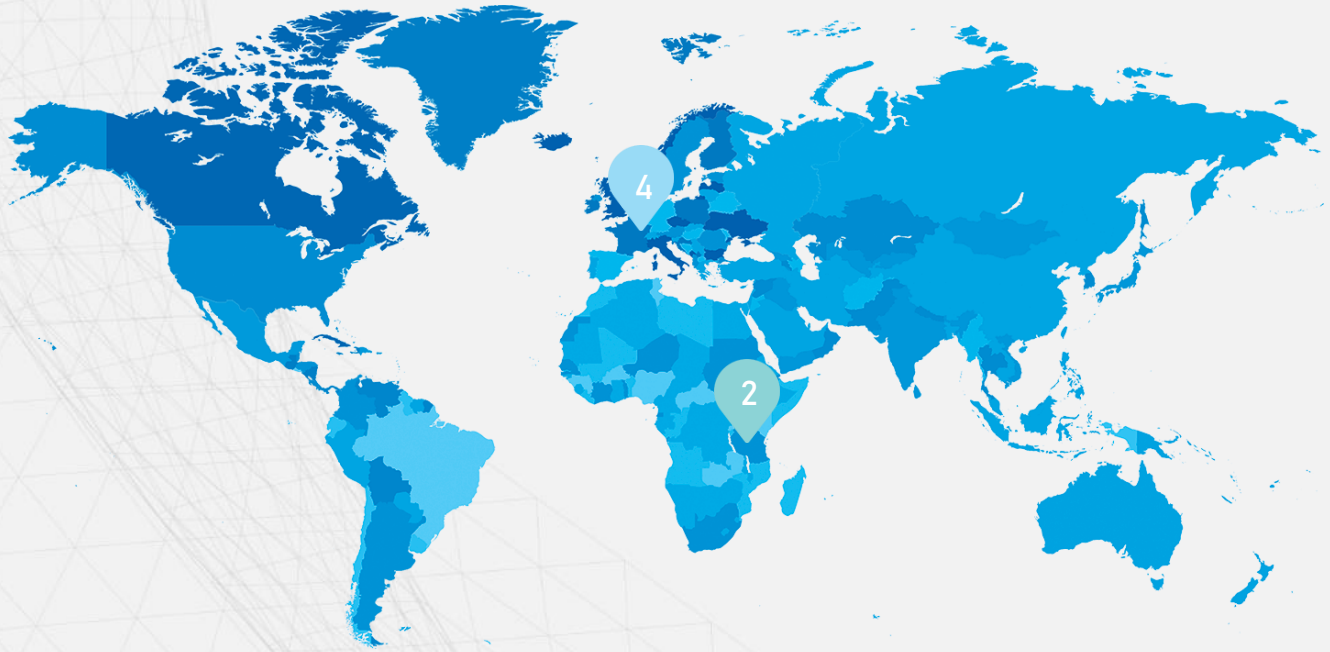
What is the aim?

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**

MESCH CONSORTIUM

Who are we?



Europe

Africa

5

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

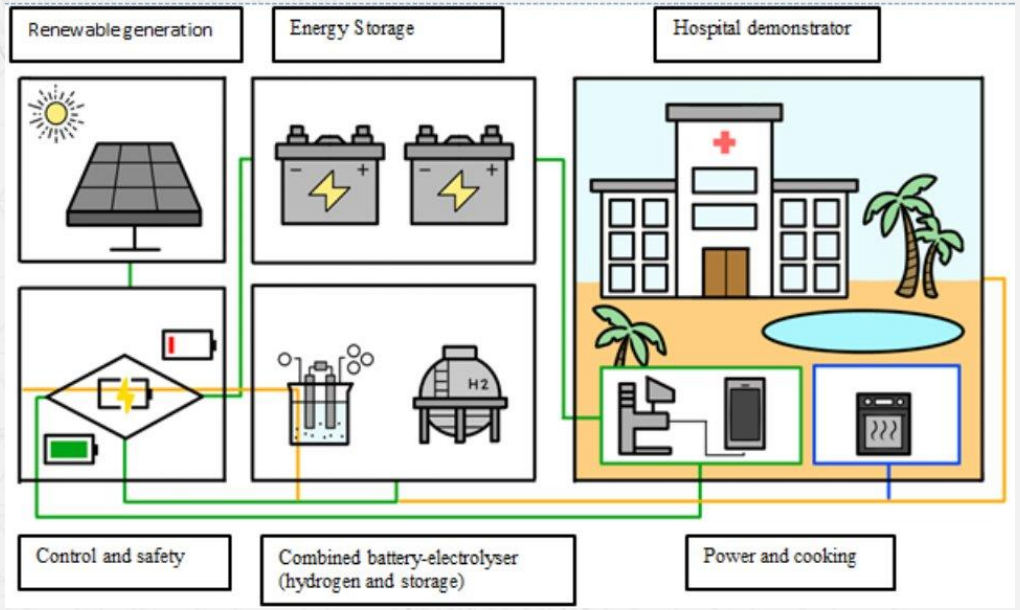
May 2024 to July 2024

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**

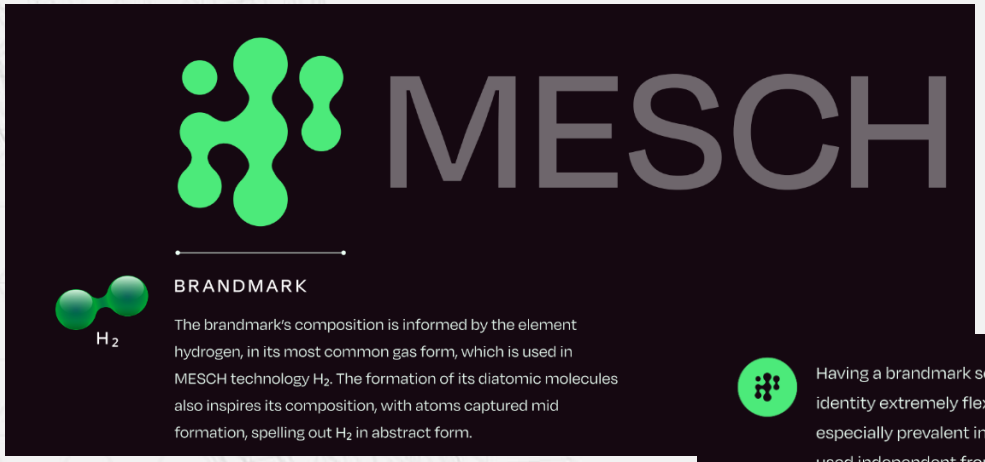
The **battery-electrolyser** both stores electrical power and produces hydrogen using electrolysis.

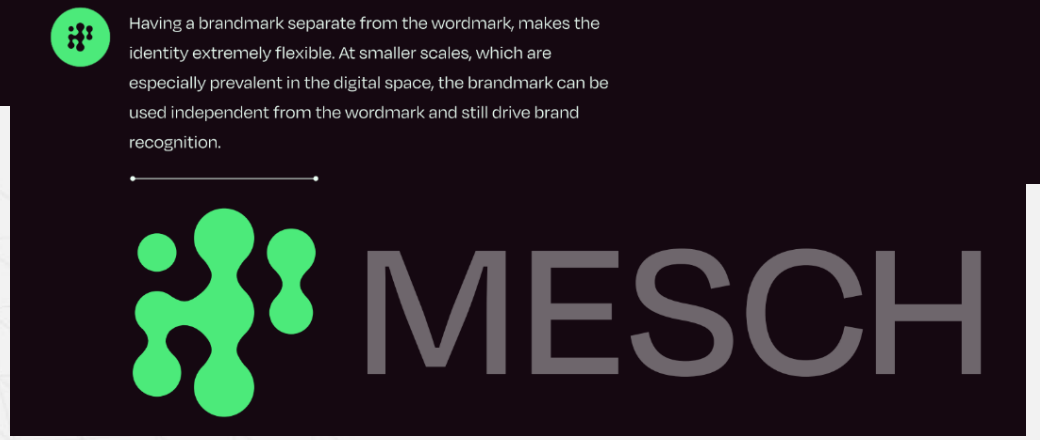
This state-of-the-art technology has as results:

- 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

THE LOGO CONCEPT

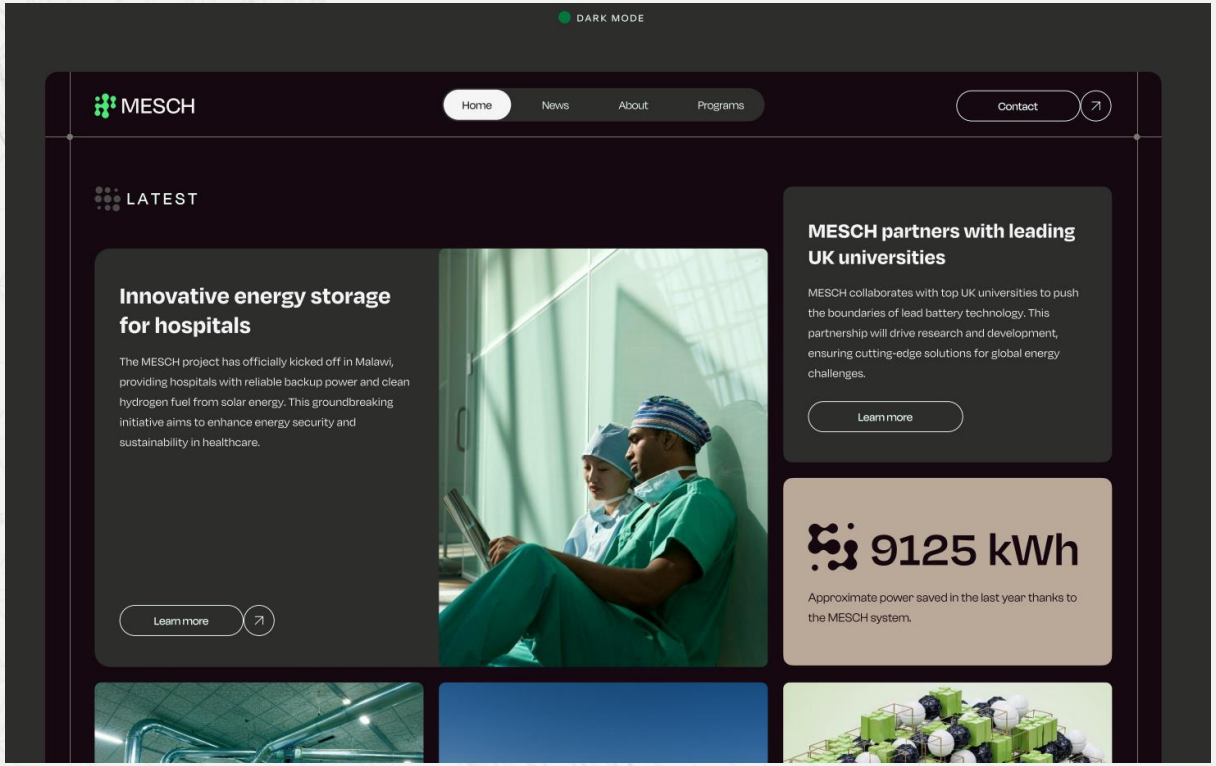
What is the idea behind the MESCH branding?

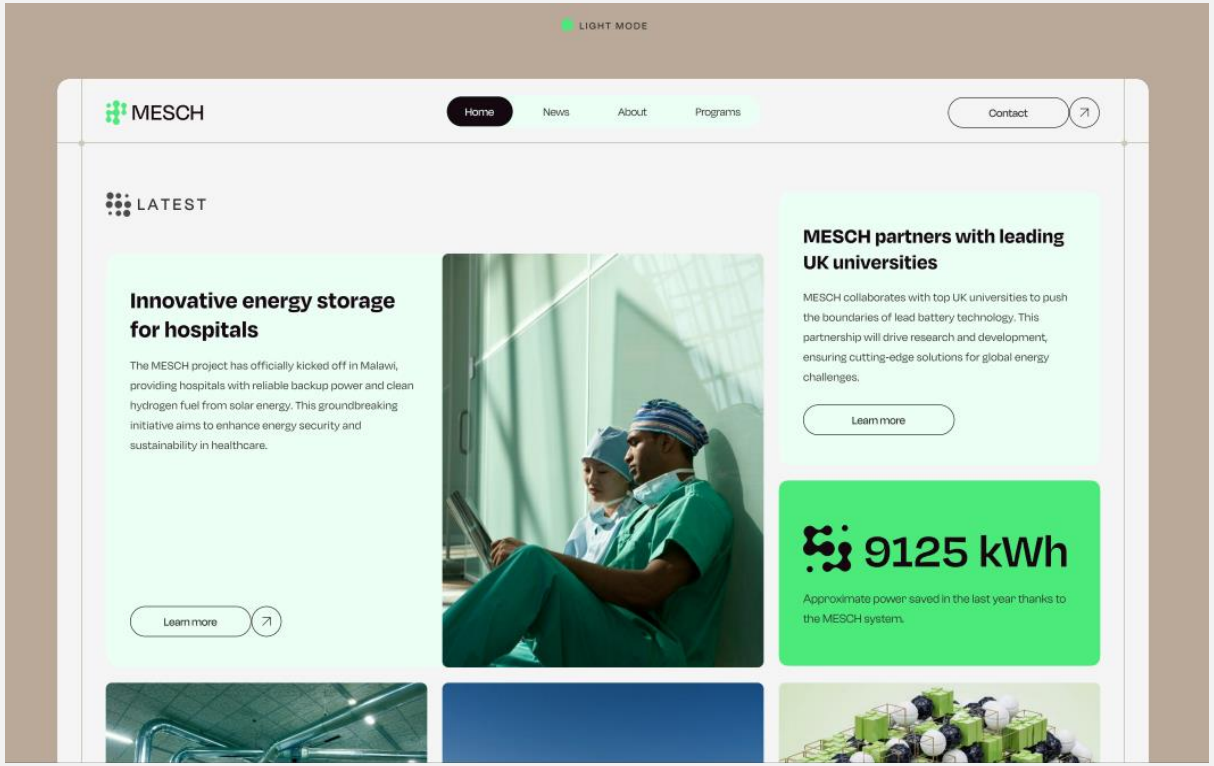




MESCH COMMUNICATION I

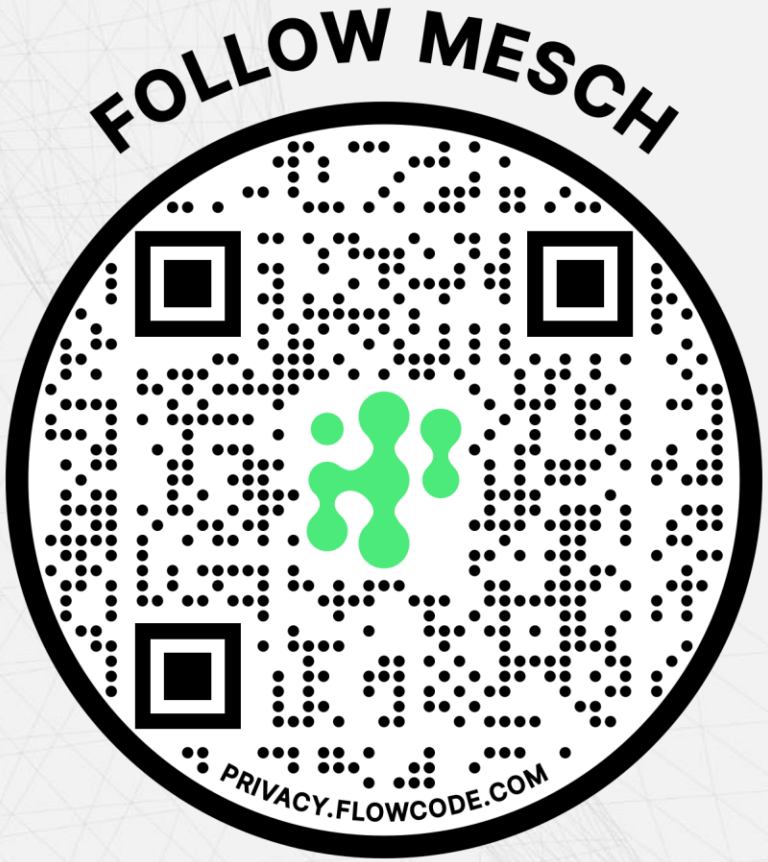
How will the official website of the project look like?

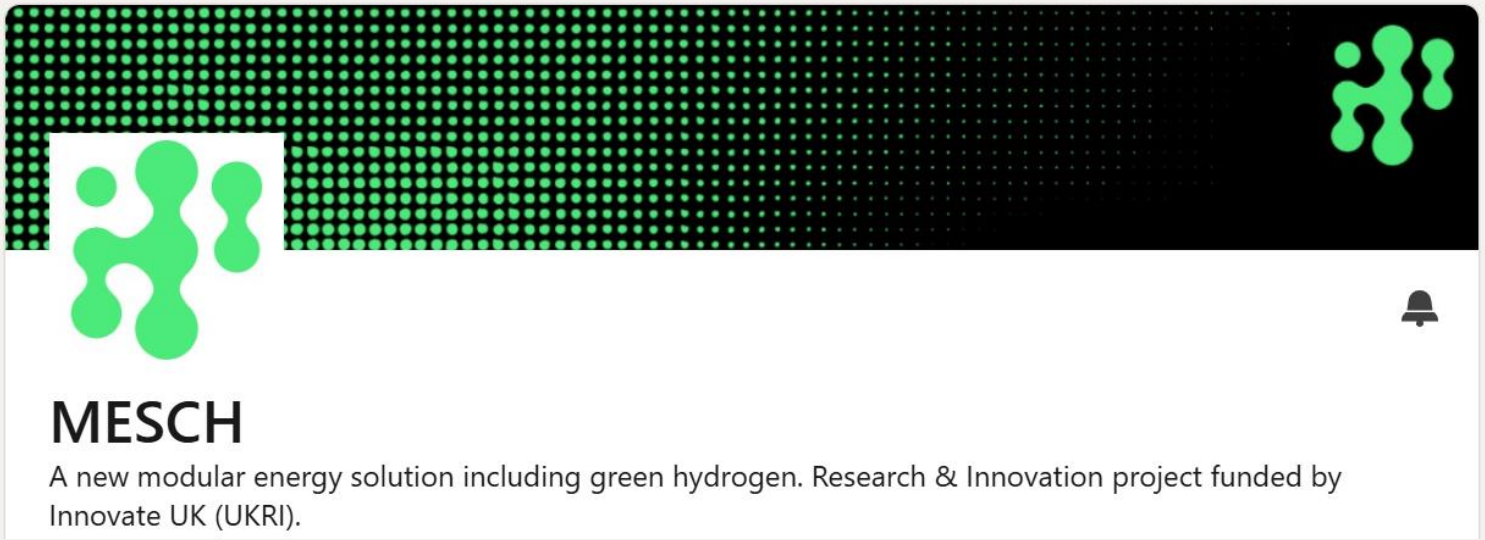




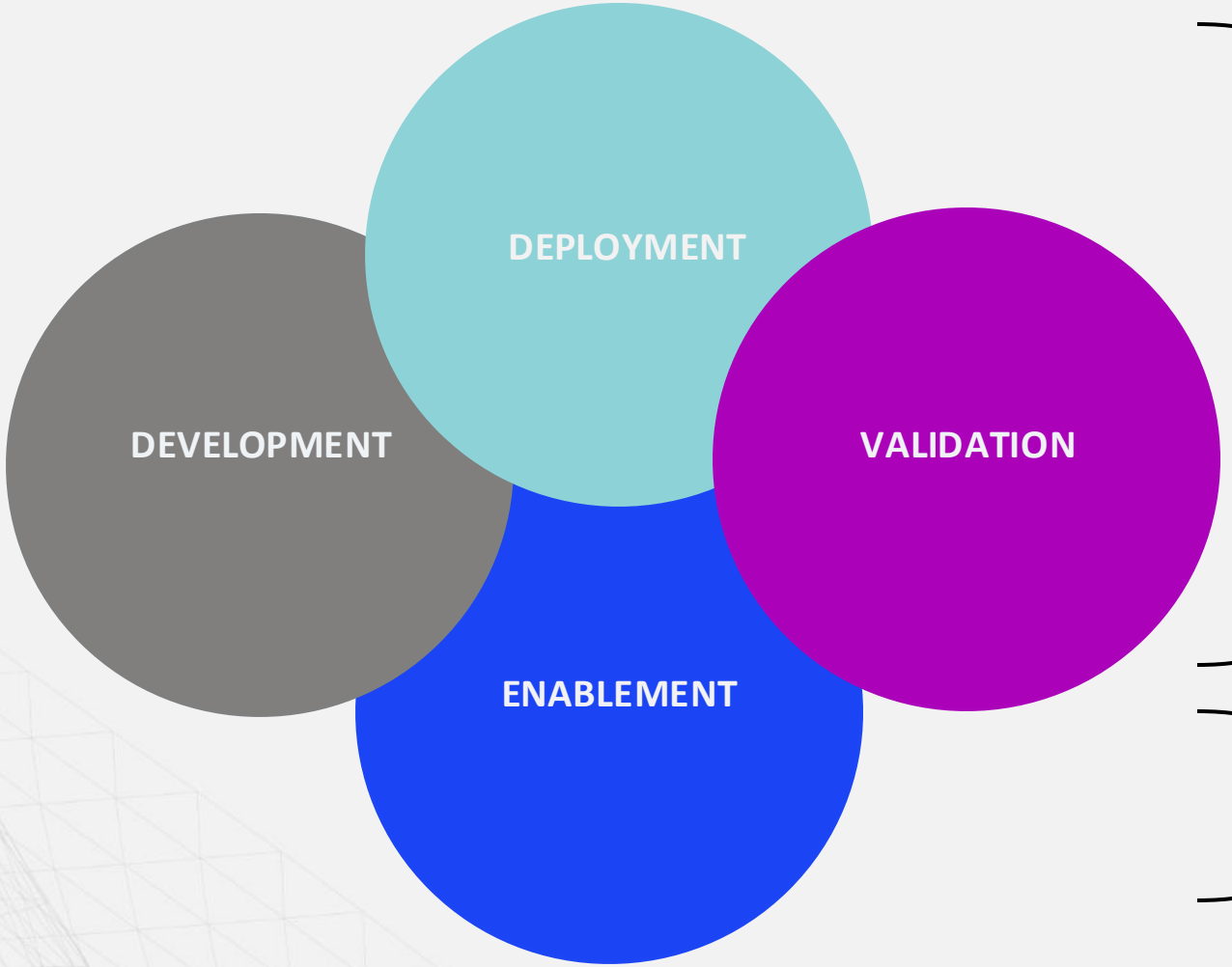
MESCH COMMUNICATION II

Where can you find us in Social Media?





MESCH PURPOSE



of a pilot MESCH installation at a hospital in Malawi

to be compatible with existing commercial micro/mini-grid formats and standards

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

MESCH CASE STUDY: MWANZA (MALAWI)

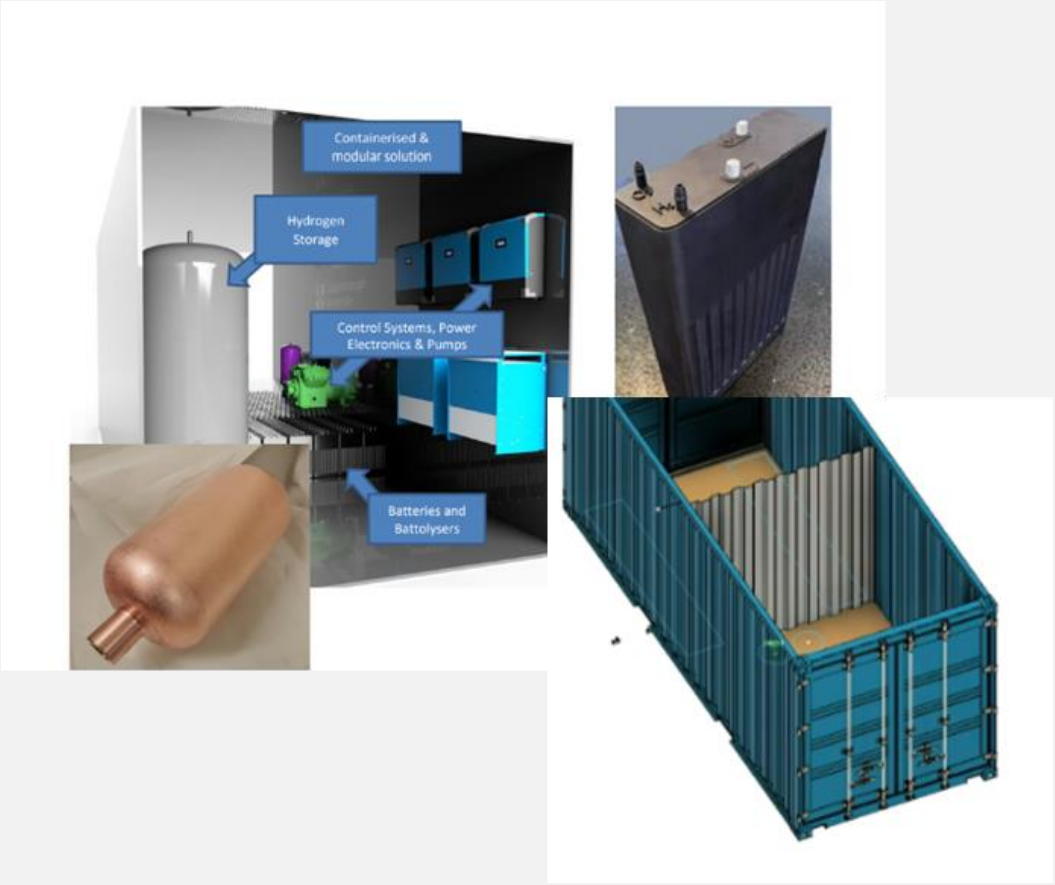
MESCH APPROACH

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.

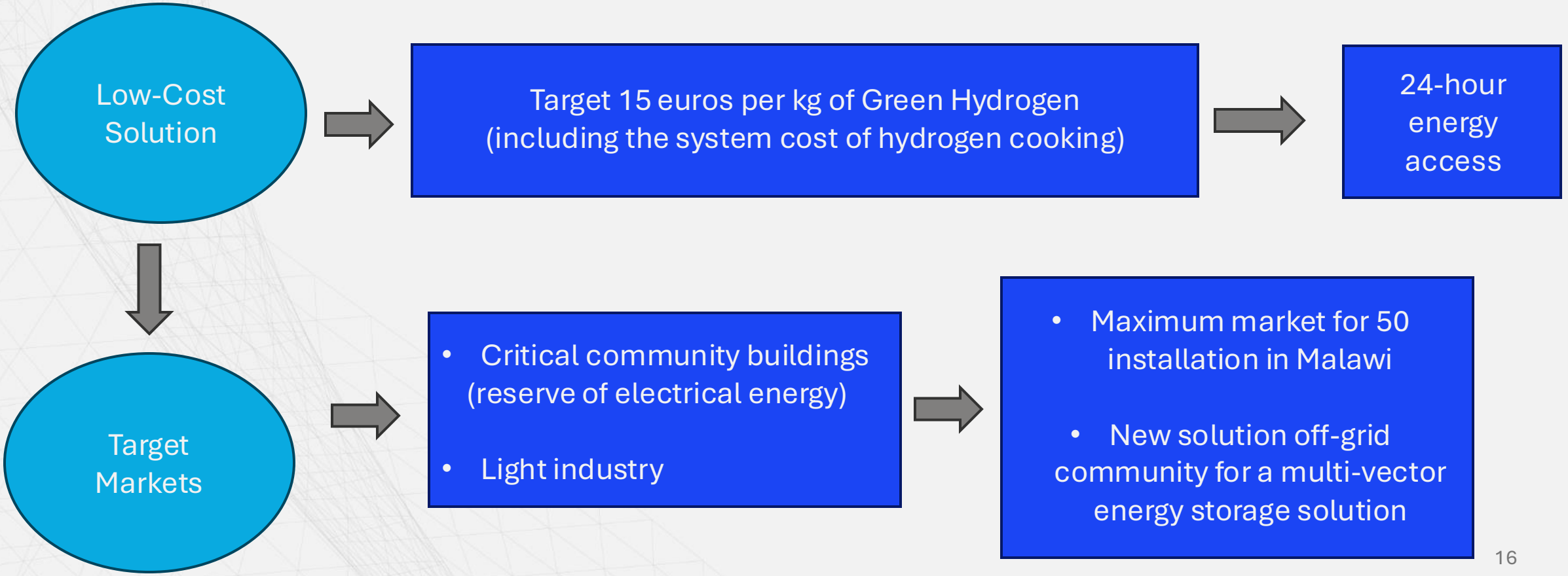
In a **Lead Carbon** battery:
carbon is added to **the negative plate** which results in a **much longer life** (MONBAT development)

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

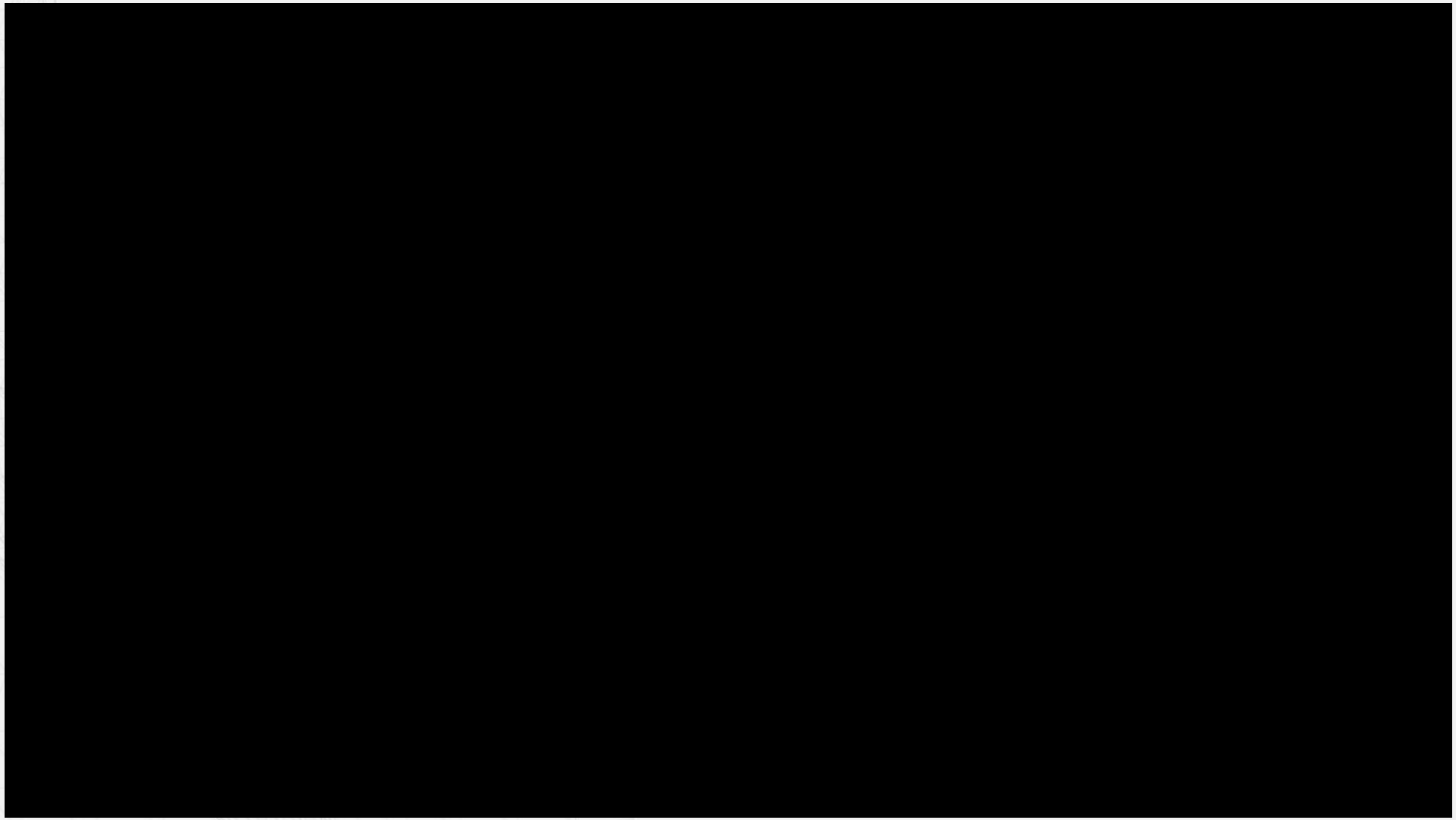
The combination of battery types allows opportunities for optimisation charge and discharge cycles to avoid partial state of charge where needed for durability enhancement.

MESCH EXPLOITATION

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



ON-SITE STORIES FROM MALAWI



THANK YOU

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CONSORTIUM FOR BATTERY INNOVATION

www.batteryinnovation.org


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