

# Feasibility Study: Hydrogen and Energy Storage Technologies Enabling Decarbonisation of the Irish Power Grid

# Who we are

- Lumcloon Energy Limited is an Offaly based company with extensive experience in the power generation industry which can provide insight into the feasibility of potential projects in the Irish market due to previous experience from years of project development
- We are a leading developer of energy storage projects which enable the transition to a low carbon economy in Ireland. We have previously completed a pilot project on the use of lead-acid batteries and flywheels for the provision of system services on the Irish grid. This hybrid project has led to the development of two 100 MW Li-ion battery plants in county Offaly that are now live and currently provide system services to the Irish grid.
- We have a proven track record of delivering large, grid-scale energy development projects.





# Project Aims

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- 1) Identification of development opportunities for Hydrogen and Energy Storage technology in West Offaly
- 2) Identify and describe relevant technologies for use in a H2 power plant
- 3) Identify and describe relevant markets for the sale of products/services relating to H2
- 4) Propose solutions for use in West Offaly

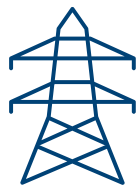
# Introduction

- The focus of the Just Transition Fund is to support communities transitioning to a low carbon economy.
- As the amount of renewable generation on the Irish grid has increased (primarily wind and solar), older fossil fuel burning generation plants have been decommissioned.
- The midlands have felt the impacts of these closures especially strongly, with large peat-fired plants closing in both Offaly and Longford.
- This feasibility study focuses on technological solutions which could replace these power plants while helping to fill the regional employment gaps created by the closures.



# Content Covered

- Information on the operation of the power grid, and the issues that it suffers from
- Technical details on a variety of Hydrogen and Energy storage technologies
- Available markets for remuneration of Hydrogen and Energy projects
- Development requirement for large projects (land, planning, grid)
- Proposed solutions (potential projects)



# Conclusions

- The conclusion of the study is that hydrogen projects in Offaly are a strong option for the redevelopment of the local power industry.
- While hydrogen cannot compete with cheap, highly efficient battery energy storage systems for short duration energy storage, it is an excellent option for ultra-long duration storage.
- It can also be sold as a transport fuel or injected into the gas grid.

