

# H<sub>2</sub>MAC

HYDROGEN FUEL CELL ELECTRIC NON-ROAD  
MOBILE MACHINERY FOR MINING AND CONSTRUCTION:  
AN INNOVATIVE, EFFICIENT, SCALABLE, SILENT AND  
MODULAR POWER-TRAIN CONCEPT



Project ID	101137786
PRR 2024	Pillar 3 – H <sub>2</sub> end uses: transport
Call topic	HORIZON-JTI-CLEANH2-2023-03-01: Real environment demonstration of non-road mobile machinery (NRMM)
Project total costs	EUR 6 278 930.00
FCH JU max. contribution	EUR 4 990 769.76
Project start - end	1.1.2024–31.12.2027
Coordinator	Instituto Tecnológico de Aragón, Spain
Beneficiaries	Asociación Española de Fabricantes Exportadores de Maquinaria para Construcción, Obras Publicas y Minería; Ballard Power Systems Europe AS; Fundación para el Desarrollo de las Nuevas Tecnologías del Hidrógeno en Aragón; Hidromek Maquinaria de Construcción España SL; Hidromek – Hydrolík Ve Mekanik Makina Imalat Sanayi Ve Ticaret AS; Mann + Hummel GmbH; Talleres ZB SA; Tampereen Korkeakouluosaatio SR; Zamalbidesservice2021 SL

<https://h2mac.eu>

## PROJECT TARGETS

Target source	Parameter	Unit	Target	Target achieved?
Project's own objectives	Noise reduction	dB	< 100	
	New technologies feasible and commercially viable	number/project	2	
	Emission reduction	CO <sub>2</sub> eq/year	0	
	FC system efficiency (TCO reduction)	%	50	
SRIA (2021–2027)	Safety reporting	%	100	
	FC module CAPEX	€/W	< 800	
	FC module availability	%	80	
	FC stack durability	hours	16 000	
	Impact on standards at scope	number/project	1	

