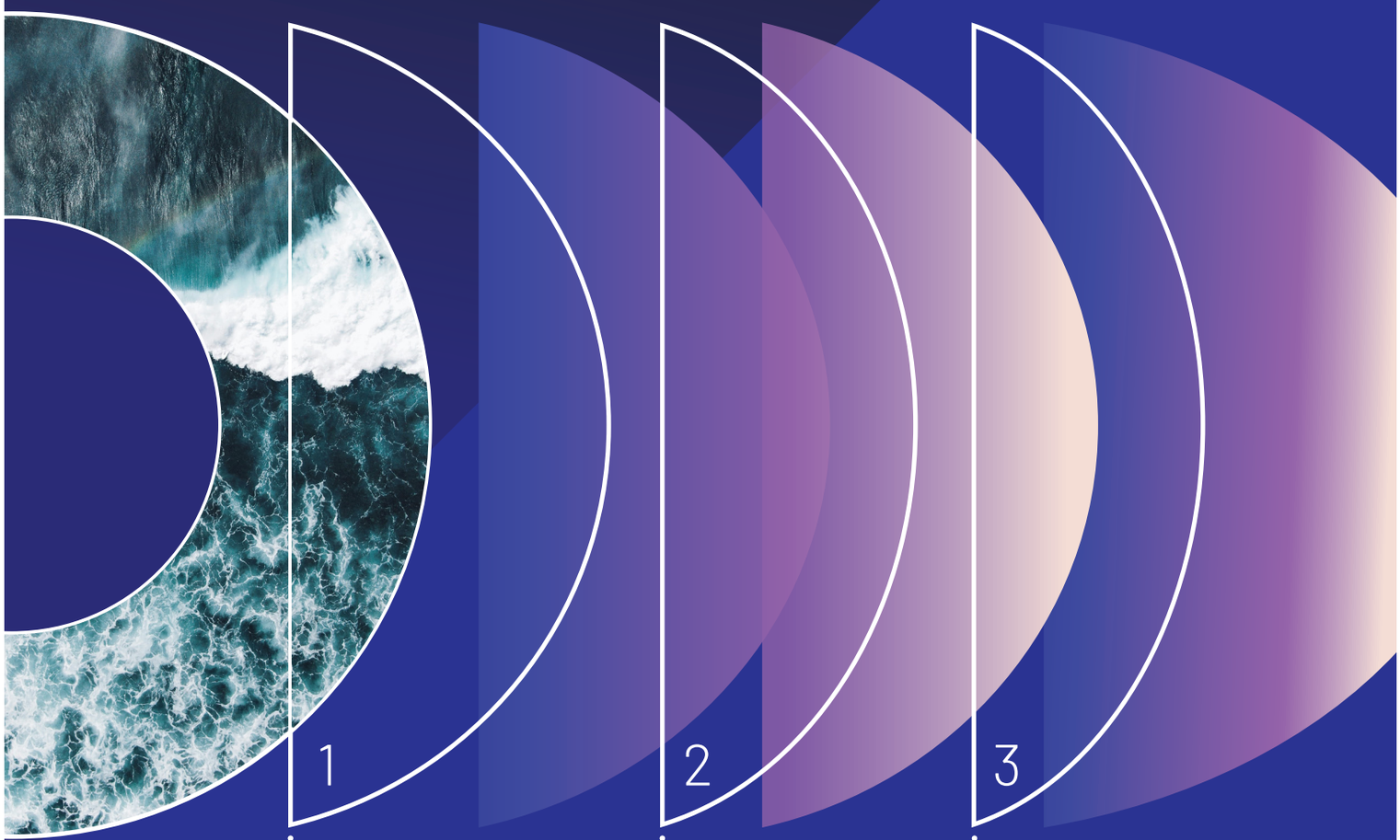
sea4volt

Seawater Electrolysis by AEM Technology for Various Liquid Feeds without Pre-Treatment

Sea4Volt aims to develop a novel low-temperature AEM electrolyser that can produce green hydrogen directly from seawater.

By tackling key challenges like chlorine formation, corrosion, as well as scarce freshwater sources, the EU-funded project aims to make seawater electrolysis safer, more efficient, and scalable - unlocking clean energy from the ocean.

Find out more at:



Seawater:
Direct feed from different seawater compositions

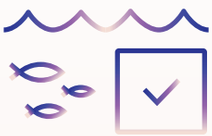
Low-temperature AEM electrolyser:
Operating under a slight pH-gradient

Green Hydrogen + Brine Valorisation

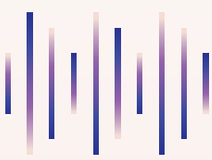
Our mission is to:

Understand seawater–material interactions using experimental and machine-learning tools

Develop PFAS-free membranes and corrosion-resistant components for seawater electrolysis

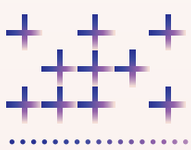


Create low-PGM electrodes that reduce precious metal use and withstand seawater poisoning



Design and build a new AEM single cell and multi-cell stack prototype for direct seawater electrolysis

Develop performance and durability testing protocols for artificial and real seawater.



Design an integrated flowsheet for a Net Zero Liquid Discharge approach, linking seawater electrolysis with brine valorisation.

PARTNERS

VTT · Fraunhofer IFAM · Cidaut · Aalto University · Gdańsk University of Technology · stargate hydrogen · HydroLite · FGS

Get in Touch with Sea4Volt

info@sea4volt.eu · @sea4volt · www.sea4volt.eu

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or Clean Hydrogen Partnership. Neither the European Union nor the granting authority can be held responsible for them.

Clean Hydrogen Partnership

The project is supported by the Clean Hydrogen Partnership and its members.