



Modular Marine Current Electrical Generator

Investor Pitch Deck

Zerem Tech Pty Ltd
Caboolture, Queensland, Australia
Patent Pending (AU Provisional 2025)

An underwater scene with sunlight rays filtering through the water surface, creating a bright, shimmering effect. A small fish is visible swimming in the upper left. In the lower left, there is a large, jagged, crystalline structure that looks like an ice formation or a mineral deposit, glowing with a blue light.

WHO IS ZEREM TECH

Zerem Tech Pty Ltd is an Australian-based clean-tech startup founded in 2025 by Johnathan Burns, headquartered in Caboolture, Qld.

Focused on ocean-current and marine-hydro renewable energy through innovative modular systems. Zerem Tech is the developer and provisional patent holder of the Modular Marine Current Electrical Generator (MMCEG) — a scalable, low-impact power platform for continuous ocean-current power generation.

The mission is to deliver 24/7 renewable energy without visual pollution, land use, or ecosystem damage.

MMCEG Combines hydrodynamic engineering, magnetically coupled power systems, and modular marine architecture to produce a rapid deployment, low maintenance, sustainable and renewable energy production system.

THE RENEWABLE ENERGY PROBLEM



ENVIRONMENT

Land-based renewables consume valuable land and disrupt ecosystems



HIGH COSTS

Deployment, operation, maintenance and post-life costs are expensive



VISUAL AMENITY

Many renewable systems are visually intrusive



RELIABILITY

Many are intermittent and require storage or backup generation



THE ZEREM TECH ENERGY SOLUTION



ENVIRONMENT

Marine-safe design
with a minimal
footprint and no land
use



LOW COSTS

Low deployment,
operation, maintenance
and post-life costs



VISUAL

AMENITY
Offshore deployment
with low profile and
minimal visual impact



RELIABILITY

Generates
continuous 24/7
power from marine
currents



TECHNOLOGY OVERVIEW MMCEG



Core Structure: Modular vertical fin tethered to a buoy and anchored to the seabed

Turbine Variant: Rim-driven axial drum generator

Foil Variant: Oscillating foils with dual-action hydraulic or direct-drive generation

Maintenance: Hot-swappable cartridges serviced via buoy-integrated hoist

Safety: Flow shutdown and protective intake vanes

Stackable modules capable of kW to MW power ranges

Physical scalability for small to large environmental applications

Multiple array configurable system for large scale deployment

Adaptable from seawall insertion to buoy mounted arrays or disused oil platform reclamation



GLOBAL MARKET OPPORTUNITY



**Global marine energy
market > USD 30 billion
by 2030**



**Supports Clean Energy
strategies in Australia and
abroad**

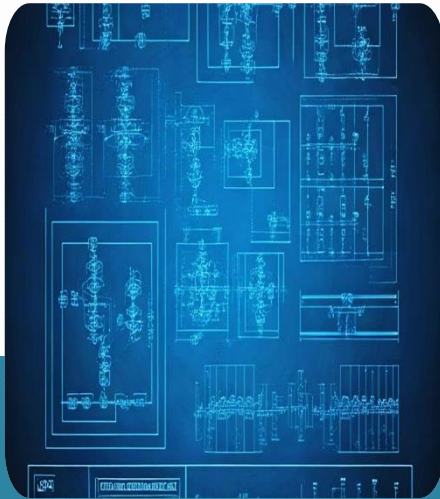


**Ideal for remote, island,
defense, and offshore
industries**



**Potential synergy with other
renewable energy generation
systems**

ZEREM TECH PROGRESS



28

PRELIMINARY
ENGINEERING
SCHEMATICS
COMPLETED



202590522

6
AUSTRALIAN
PROVISIONAL PATENT
FILED



2025

ZEREM TECH PTY LTD
COMPANY ESTABLISHED

FUNDING THE FUTURE

Funding Sought: AUD \$250,000 – \$750,000 (Seed Round)

Goal: Validate prototype performance and scalability toward Series A manufacturing and pilot deployments.

- **Detailed CAD Engineering & 3D Drafting** – Finalise parametric models, fabrication drawings, and FEA verifications (AU\$20k–\$60k).
- **Computational Fluid Dynamics (CFD) Modelling** – Simulate venturi performance, hydrodynamic loads, and efficiency optimisation (AU\$35k–\$90k).
- **1:4 Scale Prototype Fabrication** – Manufacture, assemble, and instrument a working sub-scale model for validation (AU\$120k–\$300k).
- **Tank & Basin Testing** – Controlled environment trials at facilities such as AMC (Australian Maritime College) (AU\$25k–\$80k).
- **Short Sea Trial Program** – Deploy prototype in coastal waters for operational proof and durability testing (AU\$30k–\$90k).
- **Project Management & Compliance** – Oversight, documentation, and safety certification support (AU\$20k–\$50k).
- **Contingency Reserve** – ~15–20% allocation for unforeseen engineering or testing costs (AU\$35k–\$100k).

ENERGY YIELD & EFFICIENCY

LCOE	Capacity Factor	Annual Energy	LCOE (AUD/MWh)	Disturbed Area (ha/MW)
MMCEG (Commercial)	40-50 %	700 MWh	190	0.05
Onshore Wind	30 %	525 MWh	210	0.30
Offshore Wind	45 %	788 MWh	230	0.20
Wave Energy	30 %	525 MWh	270	1.00
Solar PV	20 %	350 MWh	160	2.50

Key Metrics (200 kW equivalent comparison)



AESTHETIC & VISUAL IMPACT

INDICATIVE VISUAL / AESTHETIC IMPACT



Environmental Advantages

- ✓ Zero land use
- ✓ Silent operation
- ✓ Marine-safe
- ✓ No aesthetic intrusion
- ✓ Low maintenance
- ✓ Recyclable materials



Zerem Tech Pty Ltd

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