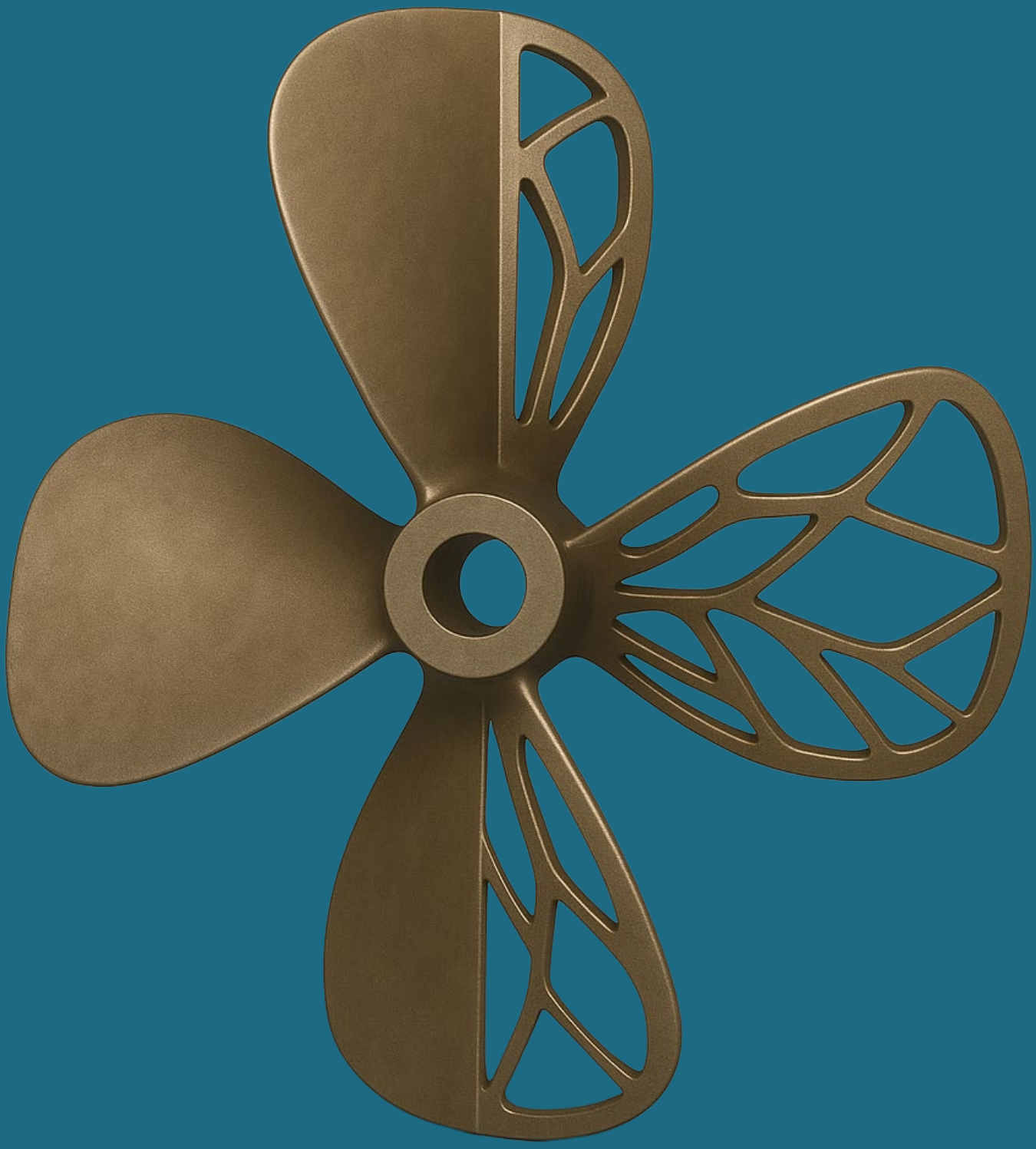
ENKI MARINE

DEEP



Digitally Enabled Efficient Propeller (DEEP)

Product Overview

DEEP is redefining marine propulsion through a new generation of **smart, high-efficiency marine propellers** that combine structural optimisation and additive manufacturing (AM) and real-time monitoring capabilities.

Customer Benefits

- **A 7% reduction in fuel consumption** lower operational costs and makes compliance possible.
- **Up to 25% less raw material** through hollow design, near-net-shape manufacturing and digital Quality Assurance (QA) slash lead times, getting vessels in the water sooner.
- **Digitally enabled** means it provides real-time visibility into performance, maintenance and compliance, putting data-driven control in your hands.
- **Traceable digital record** from design to installation, class-ready, audit-proof, and built for total quality assurance.
- **Digital twins to autonomous control**, DEEP is engineered for the next era of connected, low-carbon shipping, ready to meet tomorrow's autonomy demands.

Target Markets & Annual Savings

New build or retrofit (ROI < 4 years)

- Cruise ships
- Commercial shipping fleets
- Luxury yacht and expedition vessels
- Defence and coastguard fleets

$850,000
5100 tonnes CO_2e

$760,000
5200 tonnes CO_2e

$430,000
2500 tonnes CO_2e

$200,000
1200 tonnes CO_2e

How DEEP Delivers Value

- **Hollow, thinner blades** reduce mass inertia and increase hydrodynamic efficiency.
- **Precision AM manufacturing** allows supply-chain sovereignty, minimises manufacturing defects and removes bottlenecks.
- **Digital twin-enabled QA** ensures every propeller is certifiable and traceable.
- **Modular AM cells** allow field-deployable repair and component replacement.

DEEP at a Glance

- Real-Time Performance Insights
- Hollow, Lightweight Propeller Design
- Autonomy-Ready Propulsion Platform
- Reduced Carbon, Verified Efficiency
- Structurally Optimised Blade Geometry
- Predictive Maintenance Intelligence
- Digitally Enabled Propulsion Platform
- AM Near-Net-Shape Manufacturing
- Full Manufacturing Process Digital Twin

Dr Milad Armin

Naval architect, 10+ years of experience

Executive Director, Founder
m.armin@enkimarine.co.uk

Matthew Treadwell

20+ years experience, driving innovation in shipping

Non-executive Chairman
m.treadwell@enkimarine.co.uk

Ziane Tahir

Structural Engineer, 16+ years of experience

Principal Structural Engineer
z.tahir@enkimarine.co.uk