# Inyanga Marine Energy Group Investment Opportunity

Tomorrow's leader in tidal array technology





# TIDAL ENERGY -THE BENEFITS & CHALLENGES

### **Global Stakeholder wants:**

- Solution Soluti Solution Solution Solution Solution Solution Solution So consumers want zero-carbon producing, clean reliable power
- Governments seek energy > security and gross added value from energy projects

# **Tidal power offers a solution:**

- Unlike solar and wind, tidal energy > is predictable
- > Energy density of tides 800 x wind
- >85% Capex UK content (vs 12%) offshore wind)

### However,

- > Very high operations and maintenance costs have held back commercialisation of the sector
- Excessive insurance claims have led to higher premiums
- Large, cumbersome turbines are expensive to manufacture and very expensive to install, requiring costly offshore vessels
- Current designs have not considered subsea grid architecture
- > Political support in terms of feed-in tariffs have been inconsistent

# > Deployment in aggressive tidal streams requires specialist skills and know-how



# TIDAL ENERGY MARKET SIZE & OPPORTUNITY

# **Rapidly Emerging Sector:**

> Worldwide capacity since 2010, 30.2MW

### **Immediate High Growth Potential:**

- > UK Gov funded 100MW in 2022/23, increasing government support
- Secured 10MW in AR5 CFD allocation (2023)
- 20MW project ready for AR6 CFD > allocation (2024)
- Active development of 65MW > projects in key target markets

### **Significant Global potential:**

- > 11% of UK annual electricity, 34 TWh/year <sup>[1]</sup>
- 500GW Global market worth > €53bn annually by 2050 <sup>[2]:</sup>



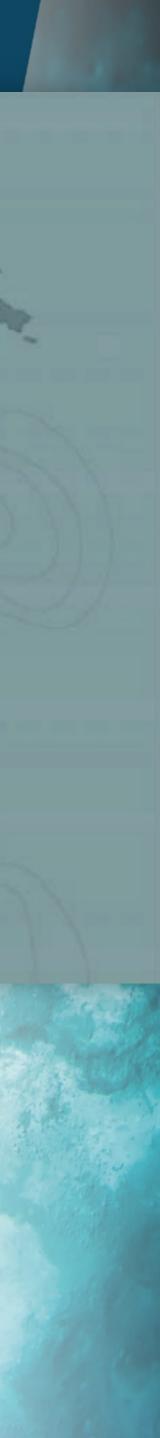
# **Key Target Markets:**

Indonesia, Philippines

[1] 'A review of the UK and British Channel Islands practical tidal stream energy resource' Published Nov 2021 by Royal Society [2] '2030 Ocean Energy Vision', Published Oct 2020 by Ocean Energy Europe

# > UK, Channel Islands, France, Canada,





# THE SOLUTION - HYDROWING PATENTED TECHNOLOGY

### HydroWing Tidal Energy System is a game changer.

It is a total 'all in one' solution that meets the challenges head on. It provides low-cost, clean, predictable and reliable electricity to the Local Grid

### What is the HydroWing?

The HydroWing is a multi-rotor subsea device with the turbines mounted in a wing-like structure which is stabbed onto a modular substructure mounted on the seabed.

The current configuration consists of 2 Tocardo T3 turbines producing up to 880kw with a 14m passive pitch bidirectional blade. The power is converted to grid compliance through a turbine control hub and connects via a wet-mate connector.





Tomorrow's leader in tidal array technology



# COMPETITIVE ADVANTAGES

## **Team record of achievement**

- Deployed 55% of total global tidal energy capacity solid commercial and technical capability
- > 30+ projects, delivered on time, on budget, with no accidents
- Inyanga was founded in 2018, with a £3m turnover by 2020/21 and £7mn by 2023/24
- > World's most proven and reliable tidal turbines (52 combined running-years)
- > 8 years operations on Eastern Scheldt project no turbine failures

# HydroWing advantages

- Efficient, reliable and proven turbines
- Same changing, patented passive pitch bi-directional blade increases yield by 60%
- Low-cost operation and maintenance >
- > The compact nature of the device allows lowcost logistics and handling - standard ISO containers
- > No need for specialist offshore vessels
- Fatigue resistant sub structure
- Lean-manufacturing with economies of scale based on low-cost components
- > 85% Capex UK content (vs 12% offshore wind)
- Minimal environmental impact zero visual impact, > zero fish/ marine mammal mortality
- > Patent portfolio 7 international patents





# INYANGA HYDROWING TIDAL ENERGY PROJECT PIPELINE



PROJECT NAME	LOCATION	DEPLOYED CAPACITY	CAPEX	STATUS
MORLAIS YL1	ANGLESEY	10MW	£39.25	UK Gov AR5 Secured
MORLAIS YL2	ANGELSEY	10MW	£35M	10MW Grid Allocation secured AR6 tender August 2024
CAPUL ISLAND	PHILIPPINES	1MW	£5M	Public Tender won- 23- EPCI Contract
MORLAIS- VERDANT	ANGESEY	5MW	£22M	Tender submitted for EPCI Supply 5 MW project- AR5
MEYGEN	PENTLAND FIRTH	5MW	£22M	Negotiation for joint 5MW AR6 submission
ALDERNEY	CHANNEL ISLANDS	1MW	£5m	Public Tender- EPCI- Preferred Bidder
NUSA PENIDA	INDONESIA	10MW	£40M	MOU with Indonesia Power
FORCE- MINAS PASSAGE	CANADA	1MW	£5M	Ongoing development in partnership with Tugliq Energies (Canadian Utility)
FROMVEUR PASSAGE- USHANT ISLAND	FRANCE	1MW	£5M	Ongoing negotiation with Sabella Liquidator to take over Sabella D10 Turbine at Ushant and change to T3
TOTAL		<b>44MW</b>	£178.25	



# 10MW YNNI'R LLEUAD PROJECT

# The largest tidal stream project in Wales to be successful in UK Government's latest Contracts for Difference round

- Fully Consented
- > Grid Connected
- > 10MW CFD AR5 awarded Oct 23
- Further 20MW potential from 2024
- > CAPEX £36M
- > OPEX £1.2M pa
- > Revenue £6.2M pa
- > AR5 Feed-In Tarif £198
   (2012) per MWh = £270 today

# HYDR WING





# UNLOCKING THE COMMERCIAL VIABILITY OF TIDAL ENERGY

Our goal is to be the world's largest provider of tidal energy arrays. We are focused on deploying fullsystem tidal arrays and a cost reduction strategy to eliminate dependency on feed-in tariffs

Our 10-year objectives are:

- > Achieve 50MW installed and reduce LCOE to £180/MWH by 2028
- > Achieve 200MW installed and reduce LCOE to £120/ MWH by 2030
- > Achieve 500MW installed and reduce LCOE to £75/MWH by 2033

### **Cost Reduction Pathway-**

will be achieved through:

- Innovative blade design and smart control systems - 60% increase in yield
- > Tocardo blade manufacturing facility by 2027 - 65% CAPEX cost reduction,
- Volume manufacturing of turbines and control systems - 60% CAPEX reduction,
- Efficient sub-structure fabrication and procurement processes - 50% CAPEX reduction,
- Bespoke O&M intervention vessel and systems - 80% OPEX cost reduction
- > Towed Array Power Distribution Hub -60% cost reduction
- > 5 yearly spare turbine changeout schedule, reducing downtime - availability 95%.



Invanga is focused on full array cost reduction pathway. This



# STRONG FINANCIAL PERFORMANCE & GROWTH POTENTIAL



### **Inyanga Maritime Ltd**

- Revenue from supporting > HW projects and third-party projects
- Turnover from offshore > operations, design consultancy and SPV-O&M
- > Activity ramps up through 2027- installation Morlais project
- Good trading history, client > base and track record
- Low gearing ratio, good > levels of EBITDA, attractive mix of income



# HydroWing Ltd

- Revenue From Turbine and **Balance of Plant Sales to** HydroWing projects
- Income rises to £56m in > 2029, sale of assets into two projects
- > R&D to date funded from retained profits, grant and equity
- > Growth based on active pipeline of projects in key target areas
- > Planned exit within 5 years



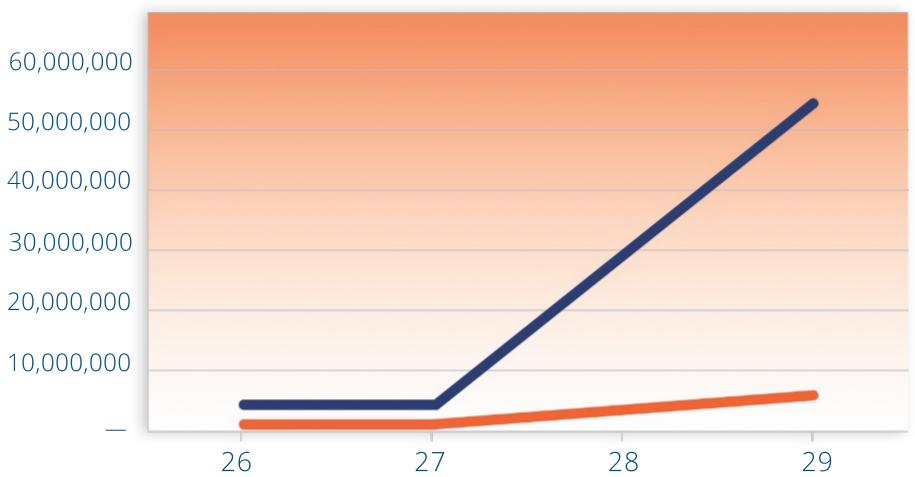
### **T/o v EBITDA £**



# **HYDR** WING



TURNOVER







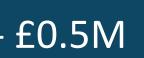
# INVESTMENT AND USE OF FUNDS

### **Investment deal:**

- > Valuation £12M
- CIOSIF Investment £1M
- > Match Investment £3M
- **>** TOPCO EIS accredited
- > Investors well represented at Board level

### Use of funds:

- > Manufacture and Onshore Testing Demonstration T3 Turbine £0.5M
- > Passive Pitch Blade Development £0.2M
- > Full Scale Demonstration Project- £2.8M
- > Project development Ynni'r Lleuad Project







# Pitch Video https://youtu.be/i5UVbVc9Cuo



Thank you for your time
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