

## Delivering Wave Energy To The World

Webinar – August 2025

**ASX: CCE** 

OTCQB: CWGYF WKN: A2DJFY





### Who is Carnegie Clean Energy

- Technology Developer
- Owner of IP including:
  - Patents
  - Know-how
  - Trade secrets (i.e. code, drawings)
- Manufacturer of CETO and MoorPower
- Service provider for project developers and owners

We harness ocean energy to make the world more sustainable



### The Problem to Solve

- Clean energy is essential for a stable climate
- Solar and Wind are highly variable and inconsistent
- Community pushback on wind developments is growing, even solar and batteries
- Nuclear is expensive and takes decades to build
- Electrification, EVs and datacentres are driving demand up rapidly
- Geopolitical issues with importing energy

iea IEA – International Energy Agency

Growth in global electricity demand is set to accelerate in the coming years as power-hungry sectors expand



The world's electricity consumption is forecast to rise at its fastest pace in recent years, growing at close to 4% annually through 2027 as power use climbs.

14 Feb 2025



OMIT

"Worst week for wind:" But is that a reason to panic about transition to renewables?



Giles Parkinson Apr 17, 2024







### Global Recognition

### EU, UK and US are committing \$ for solutions

- The European Commission (EC) has set a target of 1 GW installed ocean energy capacity by 2030 and 40 GW by 2050
- This represents up to \$5.7bn of capex on ocean energy projects by 2030 in the EU alone where €195m in funding went toward ocean energy in 2023
- Regional governments in the EU such as Spain, France and Portugal are providing funds in combination with the EU to support ocean energy
- The US has spent \$60m USD on the PacWave test site in Oregon
- Funding of \$112m USD was committed to advancing wave energy technologies in the US
- The UK is supporting wave energy through a Contracts for Difference scheme, essentially revenue support

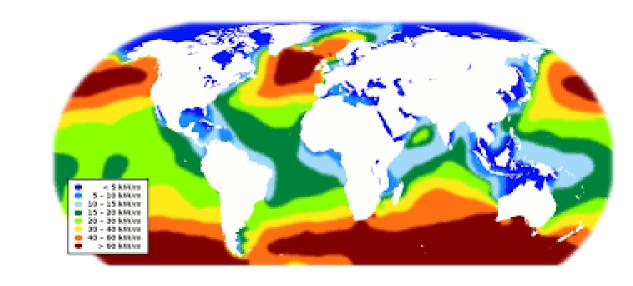


### Wave energy is special



- 24/7 power = earns more
- Water density 1000x air (wind) density
- 5x less area required compared to wind
- Ocean space less constrained

- Waves are concentrated wind energy
- Highly consistent and predictable
- Vast and untapped resource
- Most powerful when needed Winter





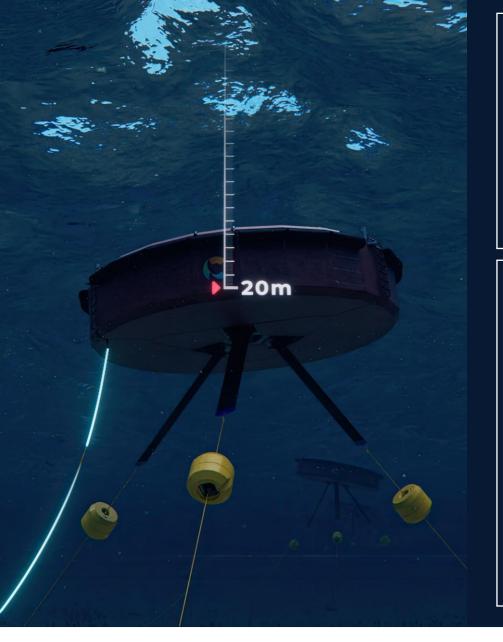
### **CETO – The leading solution at scale**



### Our core technology is unique and avoids known issues

- CETO operates fully submerged, avoiding issues of visual amenity and damaging forces from breaking storm waves
- Artificial intelligence helps us capture more by adapting to every individual wave that passes
- 1 MW capacity leads the industry
- Direct conversion to electricity (no hydraulics) delivers flexibility and efficiency gains
- CLICK TO SEE ANIMATION





# **Features**

Visual Impact	None – fully submerged
Extreme Wave Survival	Deep diving to 20 m, power production continues
Installation & Recovery	Small tow vessels, diverless and rapid with quick connectors
Maintenance	Swappable WECs at sea and PTOs in port

# Specifications

WEC Rating	1000 kW
Spatial Density	30 MW / km <sup>2</sup>
Capacity factor	30-50%
Operational Wave Range	0.5 - 14 m significant wave height
Water Depth	> 40 m (130 ft). Deeper sites simply require longer ropes
Buoy Diameter	20 m
Buoy Height	4 m





### ACHIEVE Project – Basque Country Deployment

#### **EuropeWave Contracted Deployment**

- ✓ Phase 1 [COMPLETE]
- ✓ Phase 2 [ COMPLETE ]
- ✓ From initial 36 applicants, Carnegie's ACHIEVE project ranked
   number one at commencement of Phase 3 (€3.75m)
- Judged on criteria including LCOE, performance, reliability, availability and survivability
- Deployment at BiMEP after winter with realtime stream of performance data
- ✓ Two year of operation
- ✓ Carnegie team in Spain (Bilbao) driving the project

#### **Additional National Recognition to Support and Enhance Project**

- ✓ Spanish Government (IDAE Renmarinas) awarded €1.2m Dec 2023
- ✓ Basque energy agency EVE awarded €2.1m March 2024

**Total funding pool of €7.05m** 



### **ACHIEVE Update**

Power Take-Off equipment supplied





### **ACHIEVE Update**

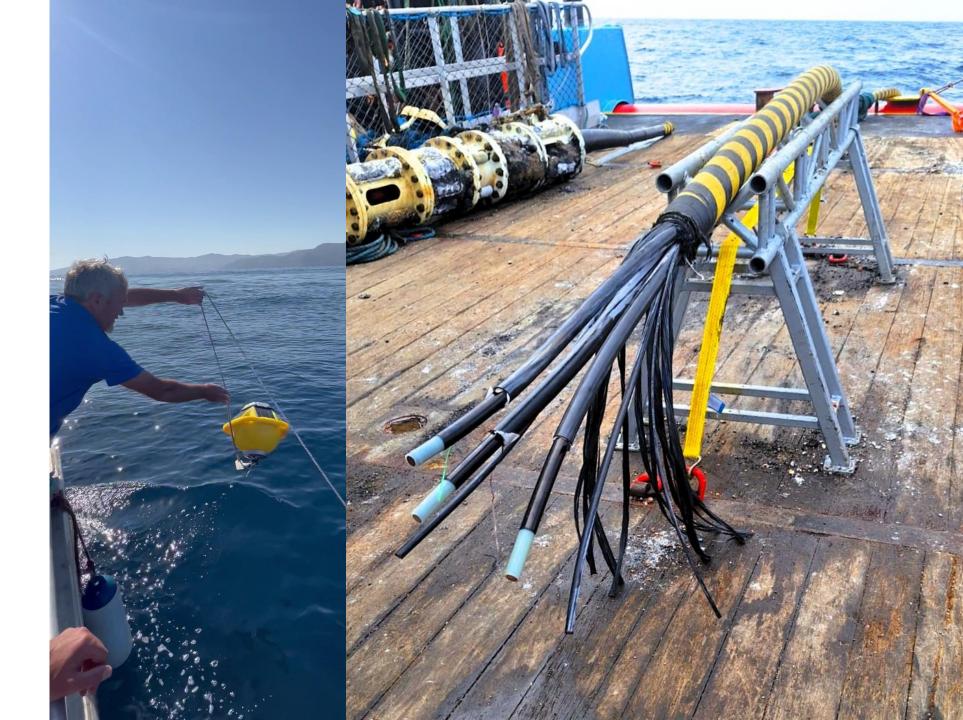
Foundation frame fabrication & chain storage at Bermeo Port



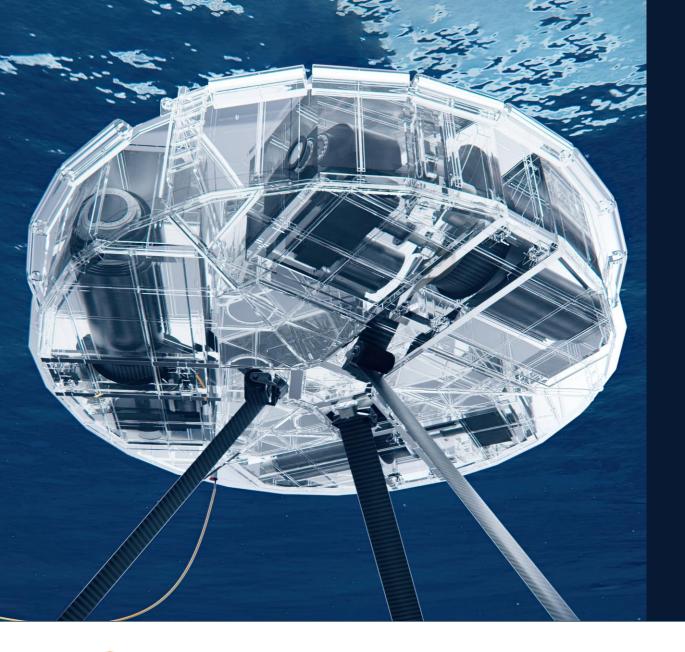


### **ACHIEVE Update**

Offshore site preparation







### **ACHIEVE Next Steps**

#### **◄** ■ Deploying large CETO prototype in Spain

- Finalise few remaining design tasks
- Continue with manufacture of remaining componentry
- Integrate using defined assembly processes
- Undertake integration tests including "back-to-back"
- Transport to port for final assembly and integration
- Wet testing alongside wharf at port
- Deploy using rapid, diverless process
- Operate to prove reliability and performance



### **6 MW Array**

- MW scale project is the next step in commercialisation
- EU support for +60% CAPEX exists
- BiMEP supportive with MoU signed in July 2025
- Discussions commenced with project participants
- Supply Chain developed through ACHIEVE including agreements with HPE and SKF





# MoorPower: Wave Energy for Aquaculture and Offshore Demand



#### **Demonstrator Project Complete**

- ✓ Scaled Demonstrator deployed at Carnegie's offshore test site in 2024
- Operations completed successfully

#### **Commercial Scale Design Underway**

- Product developed based on requirements and characteristics of offshore aquaculture
- ✓ BE CRC funding awarded to complete preliminary design

#### **Offshore Demand Application Opportunities**

 Other demand applications for aquaculture and defence are emerging





### Carnegie Business Model

### **Future revenue sources**

- Sales of CETO and MoorPower systems
- Supply spares and assist with operations and maintenance
- Provide engineering services and software upgrades
- Note:
  - Revenues commence up to 4 years prior to commissioning
  - CETO units are estimated to be 75% of the construction capex



### Global Footprint



Powering Remote Alaska CETO Wave Energy UK Limited
CETO Wave Energy Ireland Limited
Carnegie Technologies Spain S.L.



**6MW CETO Array in Europe** 



**ACHIEVE Programme** 







### Thank you

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Chairman: Anthony Shields



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