HIGH EFFICIENCY WAVE ENERGY
Survive AND maximize revenue-to-cost = Minimize peak load AND maximize average annual load
Matching structural efficiency of modern wind turbines

3 times more energy per PTO force

> 5 times more energy per ton

### Product verification in 5 stages according to IEA-OES / equimar best practice.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1</strong></td>
<td>Concept Validation</td>
<td>2012-2013</td>
</tr>
<tr>
<td></td>
<td>500K EUR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRL 2-3</td>
<td></td>
</tr>
<tr>
<td><strong>Stage 2</strong></td>
<td>Critical System tests - tank &amp; dry</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>1:2 WEC - Dry &amp; Ocean demo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.7 MEUR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5-11 people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRL 4-5</td>
<td></td>
</tr>
<tr>
<td><strong>Stage 3</strong></td>
<td>8.8 MEUR (SEA, KIC, WES, H2020)</td>
<td>2015</td>
</tr>
<tr>
<td></td>
<td>12-23 people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRL 7-9</td>
<td></td>
</tr>
<tr>
<td><strong>Stage 4</strong></td>
<td>Full Scale WEC - Dry &amp; Ocean demo</td>
<td>2016</td>
</tr>
<tr>
<td></td>
<td>15-20 MEUR (Public/Private)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23-40 people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRL 7-8</td>
<td></td>
</tr>
<tr>
<td><strong>Stage 5</strong></td>
<td>Pilot array</td>
<td>2017</td>
</tr>
<tr>
<td></td>
<td>25-30 MEUR (Public + Private)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40-60 people</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRL 8-9</td>
<td></td>
</tr>
</tbody>
</table>

- **Scale 1:30**
- **Stage 1**
- **Stage 2**
- **Stage 3**
- **Stage 4**
- **Stage 5**

**PRE-COMMERCIAL**
- 10-20 MW Farms
- Working capital
- Revenues
- >100 people
DRY TESTING - HARDWARE-IN-THE-LOOP
Quick automated installation & retrieval
Energy storage and active Microgrid function. Redundant radio & 3G comms to shore
DETUNED IN STORMS – AMPLIFIED IN NORMAL OPERATION
STAGE 3 RESULTS FROM SCAPA FLOW

- Transparent survival mode verified.
- Tuned mode verified. (WaveSpring amplification)
- Power production in ocean was consistent with the prediction by the simulation models.
- Wave spring phase control technology found robust and delivered 99% efficiency.
Resonant Wave Energy is now a reality

Survivability: TRANSPARENT

Annual Energy Production: +300%

Required Materials: -40%

Annual Energy / ton: +500%

Clear path to competitive LCOE:
→ 100 → 50 EUR / MWh

Certification towards bankability:
Statement of Feasibility
Vision:
By 2023 have an array with three devices delivering electricity to the grid, certified through Stage 5, achieving bankable accreditation
Product verification in 5 stages according to IEA-OES / equimar best practice.
SUPPLY CHAIN DEVELOPMENT IN PORTUGAL

- Mooring system
- Offshore grid connection
- Foundation
- WEC system
- Composite buoy
- PTO

WEC system assembly – On-land base, close to farm sites

PTO supply – CorPower Ocean AB, Sweden

Composite buoy supply – CPO Portugal / CS
SUPPLY CHAIN FOR PORTUGUESE WAVE FARMS

- Wave farm sites - Management, installation, O&M
- Mooring & foundation supply
- Buoy manufacturing, WEC assembly, electrical infrastructure
- PTO supply

Global supply - International farms
Local supply - Portuguese farms

Sweden
STAY TUNED