

# POWER TO CHANGE THE FUTURE

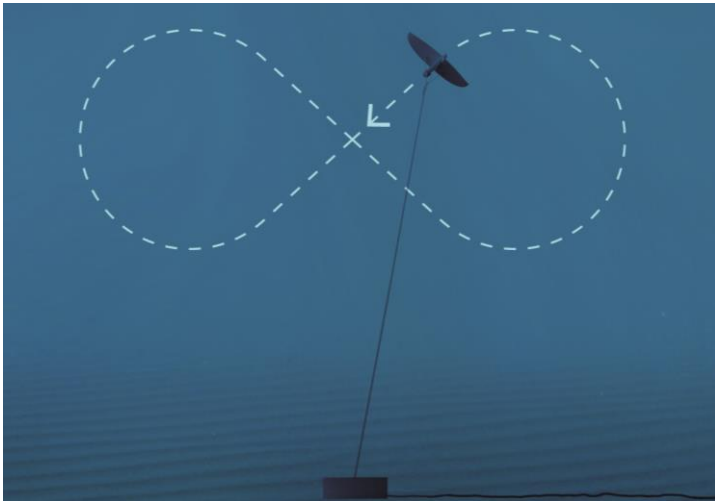


Minesto AB  
Innovation Fund Project Presentation  
June, 2019

# Game-changing renewable energy technology

## Introduction to Minesto and marine energy

- Marine energy is expected to play a critical role of the global energy transition. Within marine energy, tidal stream and ocean currents offers **energy-dense**, **predictable** and **reliable** power production, with **no visual** and **limited environmental** impact, making it a needed complement to other renewable generation technologies
- Minesto is a **leading developer** providing **a game-changing marine energy technology**, verified in utility scale, that unlocks clean electricity generation from low-flow tidal streams and ocean currents
- Some **€80m** has been invested in developing Minesto's proprietary technology called **Deep Green**, protected by almost **60 patents** across 16 key markets



Minesto develops a subsea kite technology, which consists of a wing with a turbine mounted underneath. The kite “flies” across underwater currents, generating electricity which is transmitted through seabed cables.

## Low-cost renewable baseload power

1

### Unlocks low-flow currents

- The vast part of the global marine current resource consists of **low-flow** streams (<2.5m/s), a resource **other technologies cannot exploit** cost effectively.
- Minesto's patented product enhances the **energy conversion**, making it the **only known** and **verified** technology to operate cost effectively in **low-flow marine currents**. This includes exploitation of **continuously-flowing ocean currents**.

2

### Low equipment weight – low cost of energy

- Up to **15x** lower weight per installed MW compared to competing technology
- Results in **reduced costs** for manufacturing, installation and operation
- LCOE predicted to reach **€100/MWh** at **100MW** installed capacity and **€45/MWh** at **1GW** installed capacity.

3

### Unparalleled expansion potential

- Deployable in **moderate** (<50m) and **deep** (>50m) waters, both in **high** and **low-flow** currents
- The technology's flexibility leads to **37x** larger addressable market<sup>1</sup>: more than **600GW installed capacity** equivalent to **1.5x** the current global nuclear capacity

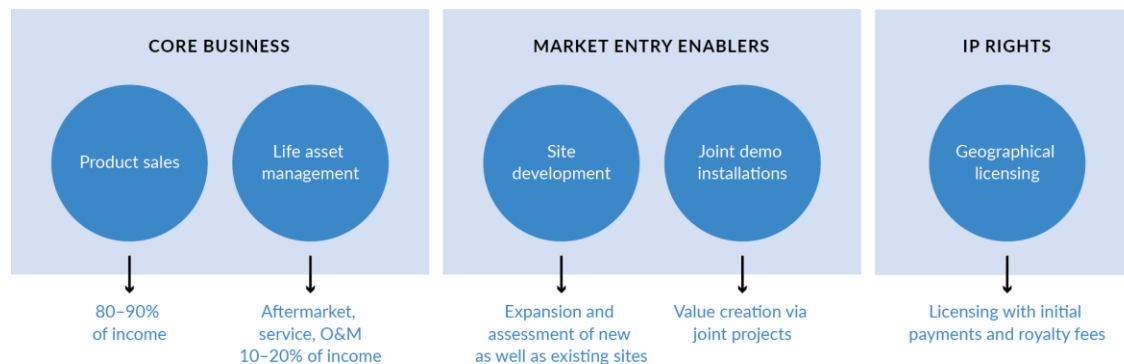


# The Minesto story

## History



## Business model



## Current product lines

- Deep Green Utility**
  - Rated power >500kW
  - Designed for multi-megawatt, grid-connected arrays
  - First 500kW unit commissioned in the Irish Sea in 2018
- Deep Green Microgrid**
  - Rated power <250kW
  - Designed for off-grid applications
  - Two installations being progressed for the Faroe Islands 2019/2020
  - Demonstrated interest, local power producer in Asia – ongoing discussions

## Technical proof of concept

- Model-scale sea trials first initiated in 2011
- Quarter-scale sea trials since 2013 verified control system and power production performance
- Successful commissioning and demonstration in Wales Summer/Autumn 2018, where the company has verified functionality, validated offshore operations procedures and generated electricity for the first time with a commercial-scale unit

# Three-phased expansion plan

	1 <b>Market establishment</b> Customer site installation	2 <b>Commercialisation</b> Commercial demonstration farms	3 <b>Industrialisation</b> Commercial farms
Installed capacity	<1MW	1-10MW+	10MW-10GW+
Key outcome	<ul style="list-style-type: none"> <li>Customer investments</li> <li>Local technology verification</li> <li>Microgrid product sales</li> </ul>	<ul style="list-style-type: none"> <li>Verification of power production performance</li> <li>Array installations</li> <li>Utility Scale product sales</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturing capacity</li> <li>Site development by project developers</li> <li>Project financing (non-Minesto)</li> <li>Technology bankable</li> <li>Electricity sales (supported by FiT/CfD)</li> </ul>
Financing	<ul style="list-style-type: none"> <li>Equity (Minesto)</li> <li>CAPEX support (public grants)</li> <li>Revenue support (small-scale PPA)</li> </ul>	<ul style="list-style-type: none"> <li>Equity (Minesto and SPV)</li> <li>CAPEX support (public grants)</li> <li>Revenue support (PPA/FiT/CfD)</li> <li>Soft loans (EIB)</li> </ul>	<ul style="list-style-type: none"> <li>Balance sheet/debt financing</li> <li>Product sales</li> <li>SPV sales/dividends</li> </ul>

