

# Penguin: Innovation and Opportunity



October 17<sup>th</sup> 2016 Heikki Paakkinen, CEO, Wello



# Penguin: Innovation and Opportunity

## Penguin - Wello

- Wello is a company providing technology for converting wave energy into electricity



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## Innovation

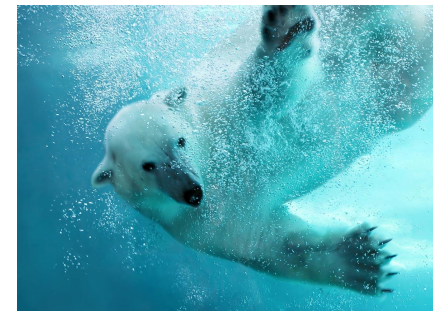
- Wello Penguin is a highly innovative solution for capturing wave energy and converting it into electricity



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## **Penguin, the wave energy converter**

- Wello's patented technology is able to convert the movement of waves directly into rotation. The rotating eccentric mass actuated by waves drives directly a generator similar to those used in wind turbines.
- The device is fully encapsulated and has no moving parts in contact with water. This ensures durability in all kinds of weather conditions.
- The hull construction is similar to a conventional vessel, only the shape is different. This enables easily scaling up the cost-efficient manufacturing: it can be built by practically any shipyard.



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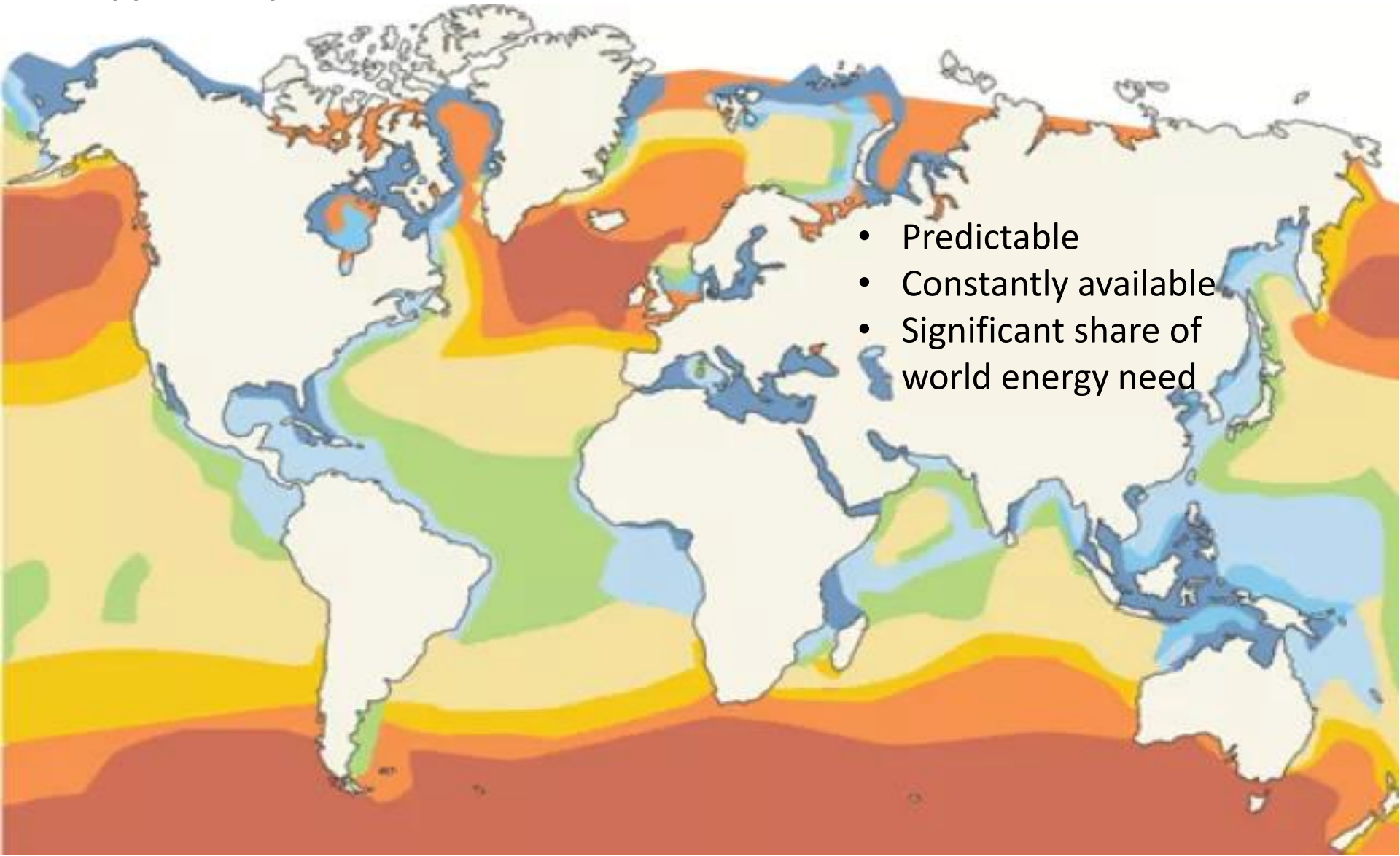
## Opportunity

- Need for clean, renewable energy forms a huge opportunity for new kind of businesses.



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## Opportunity

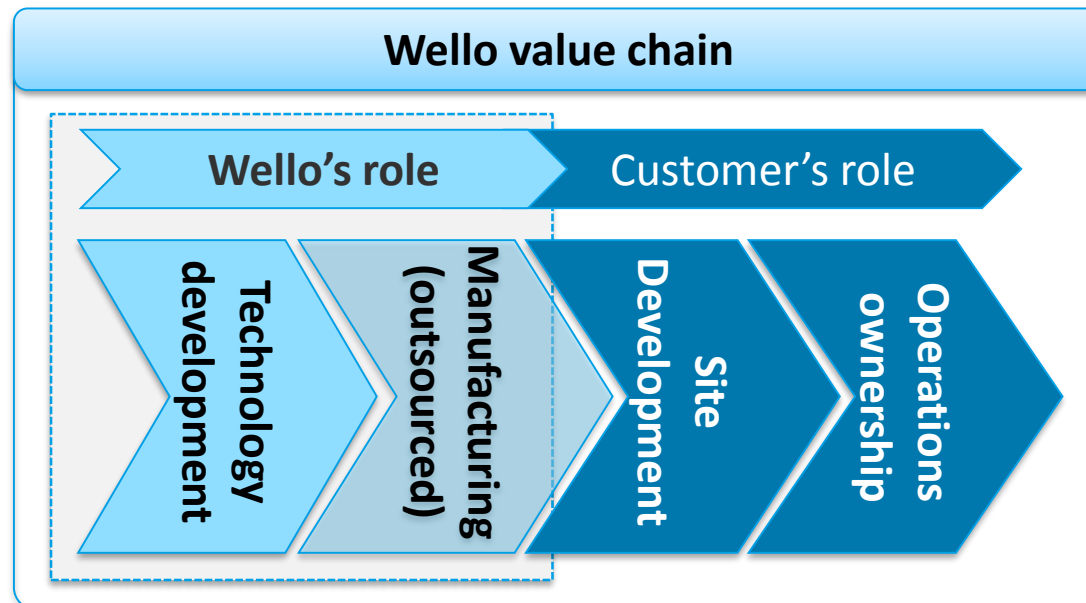


- Predictable
- Constantly available
- Significant share of world energy need

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## Wello's role

- Wello is responsible for the technology and the WEC manufacturing.
- The customer will be in charge of site development, deployment and operations.
- Hull construction and manufacturing can be carried out locally, near site, if customer so requires



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## Customer project ongoing

- Multi device site up to 10MW with focus on long term operations, first phase funding 8M€ secured
- Staged deployment over next 4-5 years (2017-2020)



## Building pipeline for additional deliveries

- Wello is shortlisted for ESB West Wave project (5MW) to be implemented 2018-2019
- Ongoing dialogue with European utilities
- LOI with Korean BSR CO Ltd for a pilot project

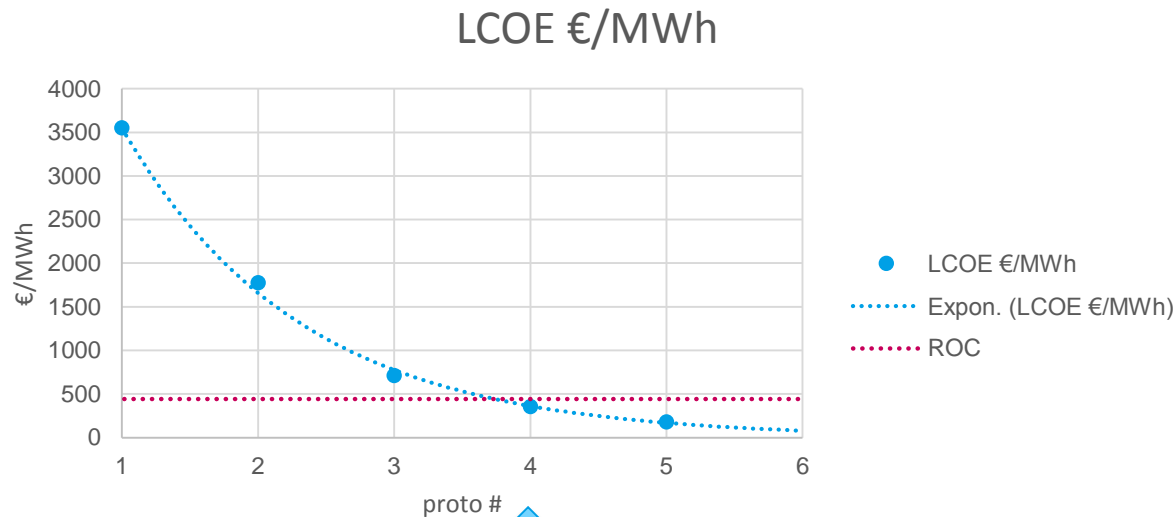




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## LCOE – Levelized Cost of Energy

According to the development road-map Wello is looking to reach LCOE in the range of EUR100-EUR150/MWh by 2020 and below <EUR100/MWh by 2025.



↑  
Present technology

# Values

Nature First

Striving for simplicity

Professionalism



Wellco

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DIRECT CONVERSION