

# Magallanes Renovables - Challenges and opportunities for tidal energy



September 08<sup>th</sup> 2021, ETIP Ocean & NEMMO  
Innovative materials for ocean energy

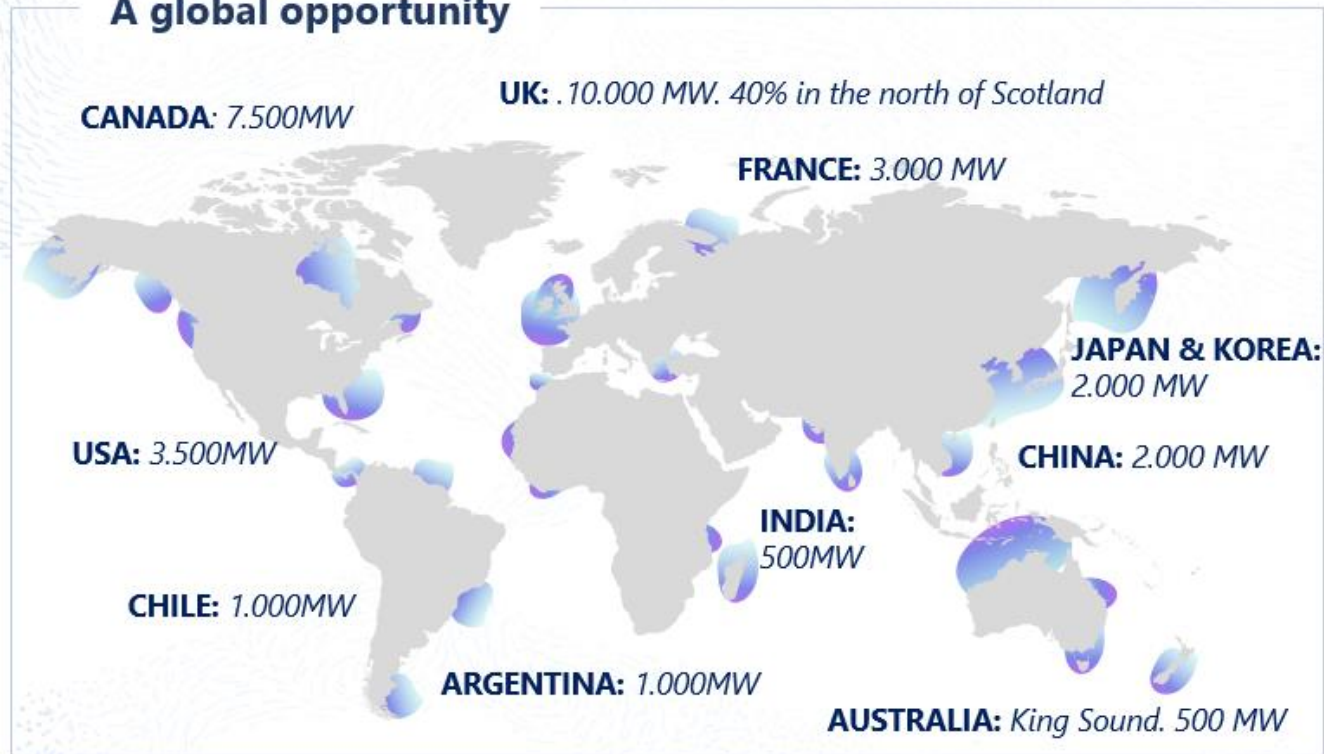
Mario Iglesias, Magallanes Renovables





# Tidal Energy

## A global opportunity



## EU Estimates for 2030



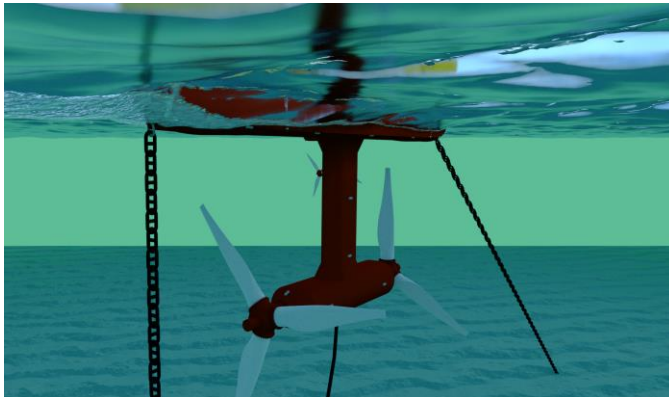


# Technical Challenges of Tidal Turbines.



Reliable technologies

Blades



Cable&Mooring

# Key Aspects of Magallanes Tidal Turbine.

A full-scale 1:1 size prototype TRL7 was manufactured and it is currently operating at Fall of Warness in EMEC (Scotland).



**3.500MWh/year**  
**Pre-certification process.**  
**Easy access maintenance**  
**Antifouling**



**Current 270° pitch**  
**8,5 m length**  
**Efficient shape**

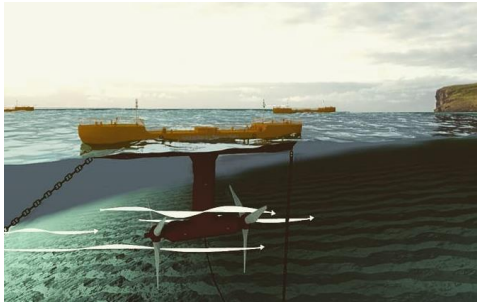


**4 moorings 700tn**  
**Dynamic cable center**  
**Seabed connection**





# Challenges in NEMMO project



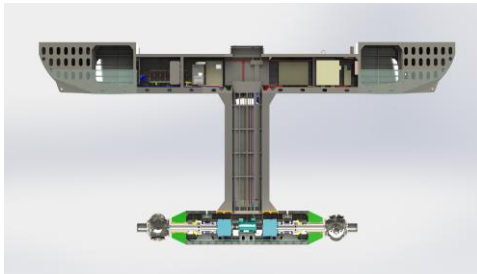
**Fine Tuning of the Control Systems to increase production and performance.**

**Replicability prediction**



**Reduce loads in the mechanical system.**

**Improve life and performance of the blades due to ageing and biofouling growth**



**Explore 34 MW and 100MW Tidal Farms**

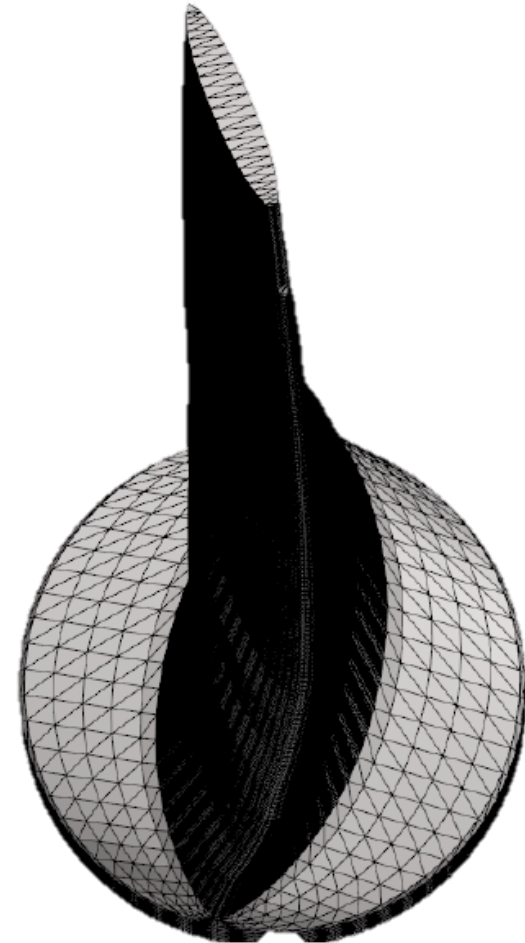
**Reduce capital and operational costs**



# Blades Challenge

In this project we focus in the blades and the all improvements necessary to develop

1. Different shape to work in both
2. Better performance
3. Easier com/decom process with dives
4. New and better antifouling
5. Sensoring in the blades



**Thank You for your  
attention.**



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