

Tidal Power, *in search of reliable and economical solutions*

FMGC designs and develops gray cast iron ballast for gravity-based foundations.

A convincing solution that has been already applied in France

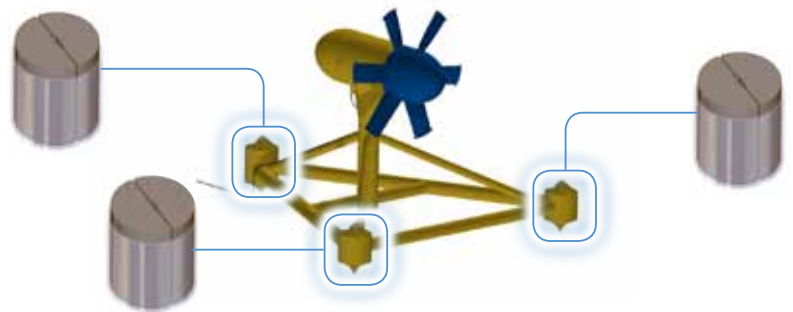
The demonstrator project Sabella D10



- **Implementation** : Passage du Fromveur near Ushant.
- **Foundation** : Welded triangular gravity base with cylindrical legs.
- **Ballast** : 10 tons in the nacelle and 180 tons in total in the supporting legs.
- **Handling** : The grippers enable the right positioning of the ballast.
- **Installation** : The ballast can be integrated in the foundation onshore.

“Cast iron meets all our product quality requirements in terms of high density, cost competitiveness, simplified handling, easy installation, and excellent behaviour in marine environment with very low impact.”

Jean-François DAVIAU
President of Sabella



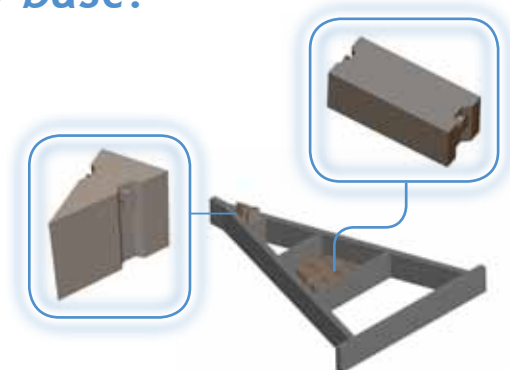
A modular solution that can easily adapt to the specific technology of your gravity base:



Welded cylindrical base reinforced by sheet metal with cast iron ballast.



Welded base with a central stake, manufactured without formwork and comprising ballast that can be integrated onshore or offshore.



Reinforced concrete base with integrated and/or inserted cast iron ballast.

We provide custom tailored solutions.
Submit your request:

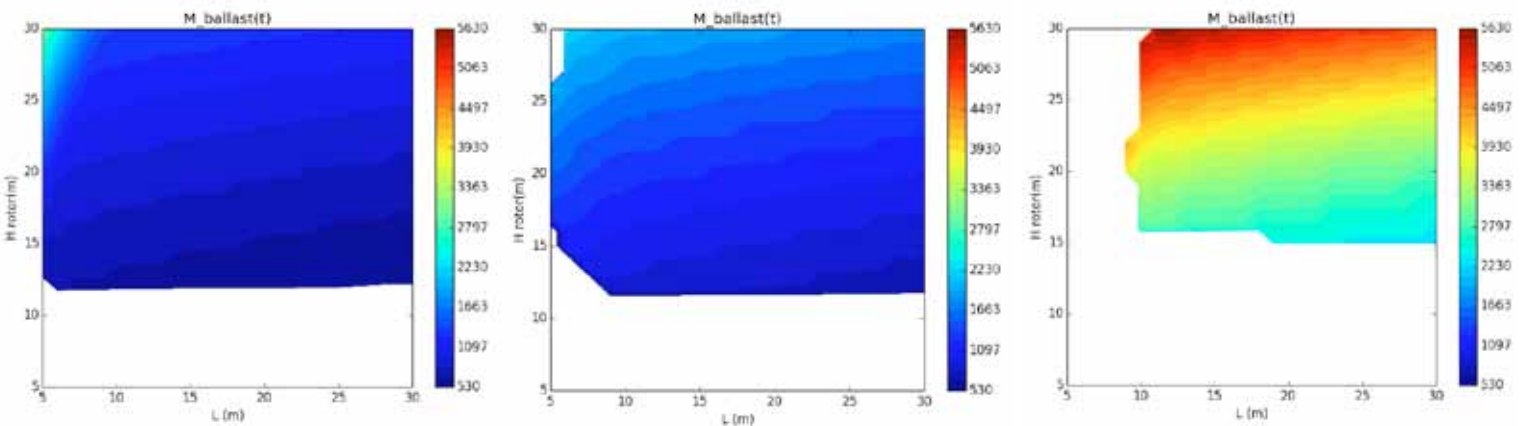
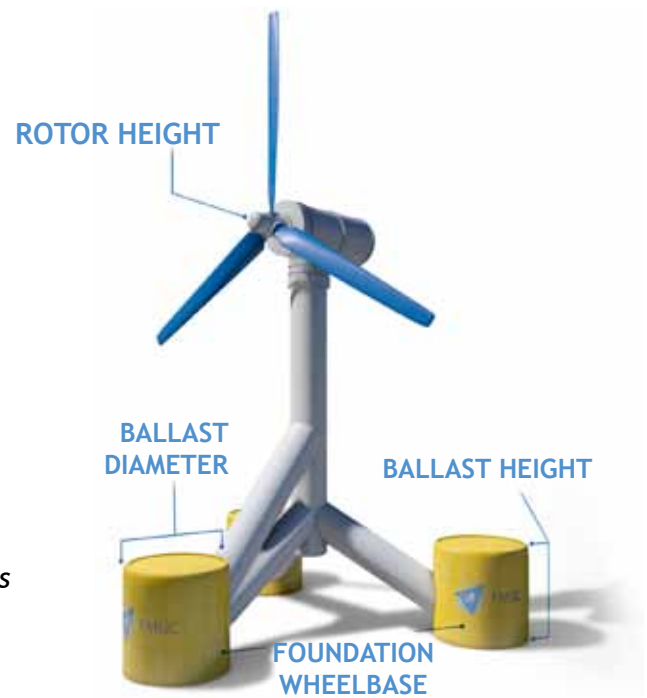


An economically efficient technical solution

FMGC assigned INNOSEA to conduct a research on how to optimize the ballast of gravity foundations for tidal turbines.

This study has confirmed that cast iron ballast:

- Minimizes the footprint of the foundation on the seabed ;
- Reduces submerged volumes and therefore the surfaces exposed to hydrodynamic forces ;
- Optimizes transport and logistics cost and contributes to an efficient supply chain ;
- Minimizes tipping over and/or sliding and therefore enables various designs and shapes of the foundation ;
- Is lighter than concrete.



Simulation results for a 1 MW tidal turbine in Paimpol-Bréhat. From left to right, ballast: cast iron, dense concrete, concrete.

Customized extended analysis will determine the exact amount of cast iron ballast needed for your individual project!

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