

## Maridea presents: Moray-Base

The size of wind turbines grows rapidly. At the same time the increasing number of constructed farms reduces the number of available shallow water locations. Therefore, industry seeks ways to develop wind farms at waterdepths of 100m and deeper with turbines ranging up to and over 15MW.

Maridea developed the Moray-Base, a floating foundation which supports for both developments simultaneously. Like its name-giver, the Moray-Base consists of a large, single curved tube without pontoons, braces or junctions. Its structure is therefore alike monopiles rather than conventional semi-submersibles.

## Moray-Base at a glance

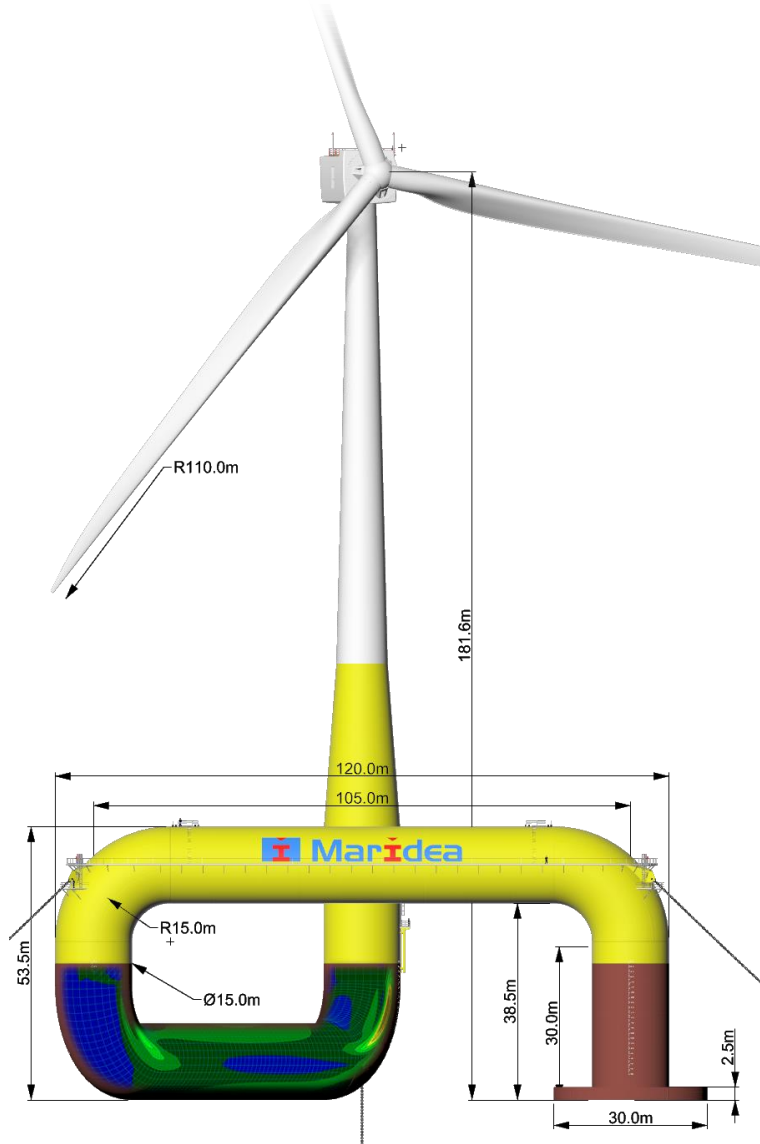
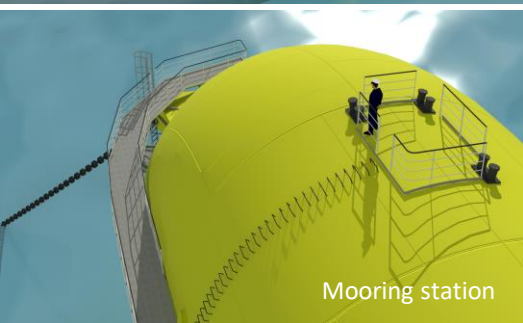
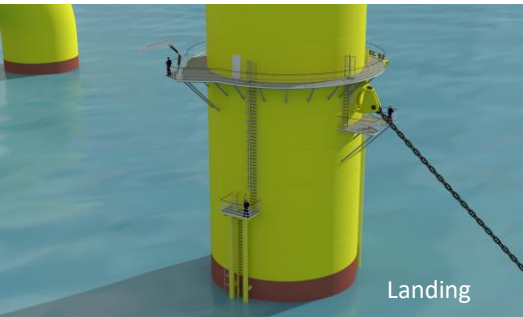
The Moray-Base is Capex and Opex friendly since it is:

- Suitable for production in series;
- Without nodes and has less fatigue hotspots;
- A thick walled steel structure without close-spaced framing;
- Easy inspectable;
- Allowing turbine installation and commissioning inshore;
- Well accessible with installation vessels.

## Robustness and simplicity by design

The foundation is shaped as an equilateral triangle. The large diameter and thick-walled tubes are well able to withstand the turbine loads and the forces from waves and inertia during severe storms. The long radius elbows result in far less stresses than the joints of traditional submersibles or jackets. This makes the structure less prone to fatigue and requires limited inspections.

The water ballast is stationary over the full lifetime, which makes a ship-like ballast system dispensable.



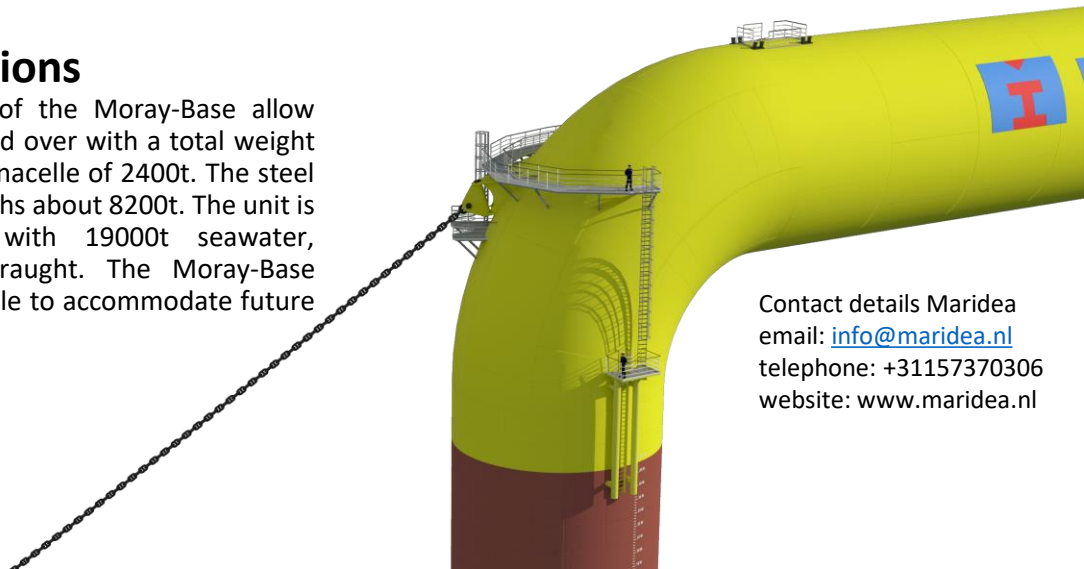
## Efficient, flexible production

The tubes, without stiffeners, allow for efficient series production, much like monopiles. Based on segments of single axis curved plates, the elbows are easy to build too.

The Moray-Base allows turbine installation and commissioning inshore at shallow draught. Completion inshore reduces costs and installation times offshore significantly. Alternatively, the corner location of the turbine allows good access for (single lift) construction vessels, when turbine installation offshore is preferred.

## Main dimensions

Current dimensions of the Moray-Base allow turbines of 15MW and over with a total weight of tower, blades and nacelle of 2400t. The steel foundation itself weighs about 8200t. The unit is ballasted offshore with 19000t seawater, resulting in 30m draught. The Moray-Base concept is well scalable to accommodate future larger turbines.



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