

rethink*rotor goes Japan

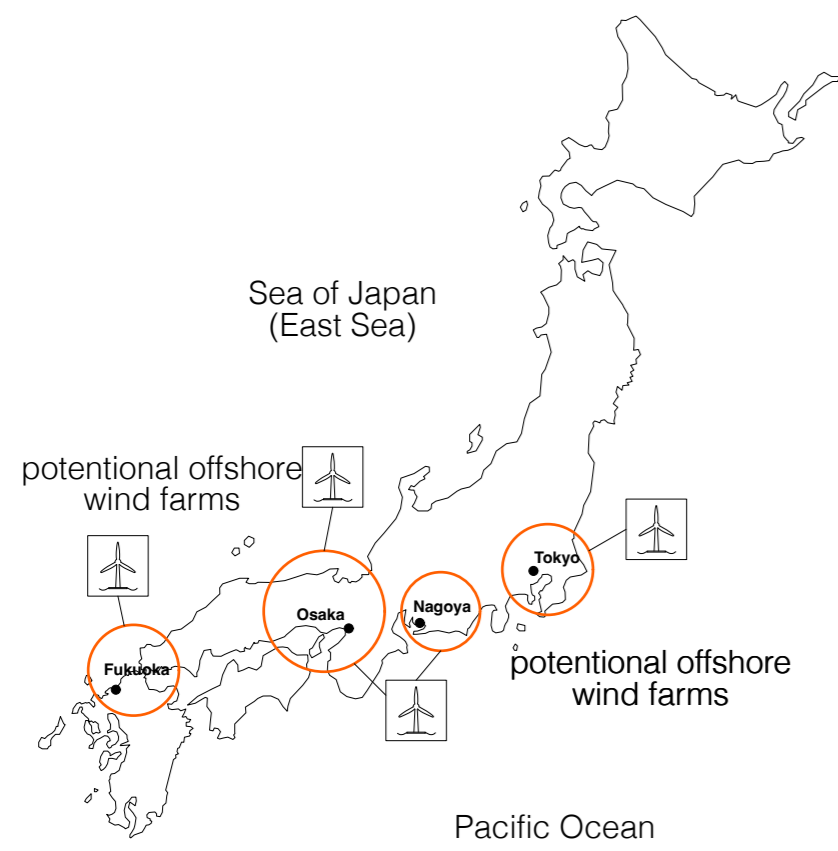
Floating energy for Japan's greener future

Desing by Gronewold Jan-Hendrik and Seitz Luis



Overview of Japan:

Energy demand in Japan urban hubs and potential offshore wind farms



Population distribution Japan:

124,5 million inhabitants	
Region-Tokio-Yokohama	33%
Region-Nagoya	19%
Region-Osaka-Kobe-Kyoto	19%
Region-Fukuako	10%

How many Turbines for a greener Japan?

Energie demand Japan per year:	950 billion kWh
Average wind turbine production per year:	30 million kWh
Turbines needed:	31.667

How much space is needed?

Turbines needed:	31.667
Space per turbine:	1000m ²
Space needed:	31.667km ²

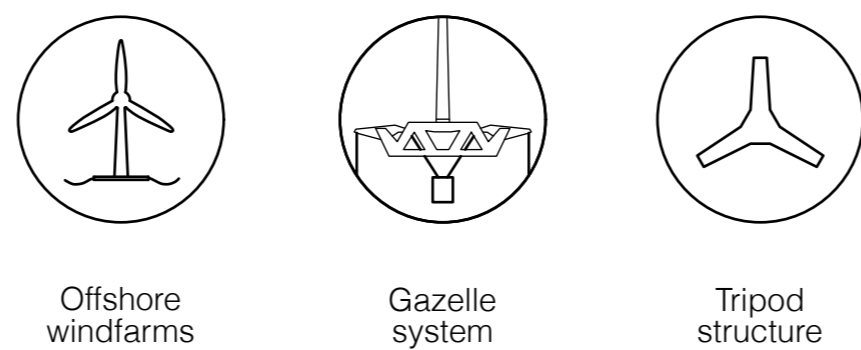
Offshore Windfarm:

A modular platform for Japan and its needs

Platform Concept

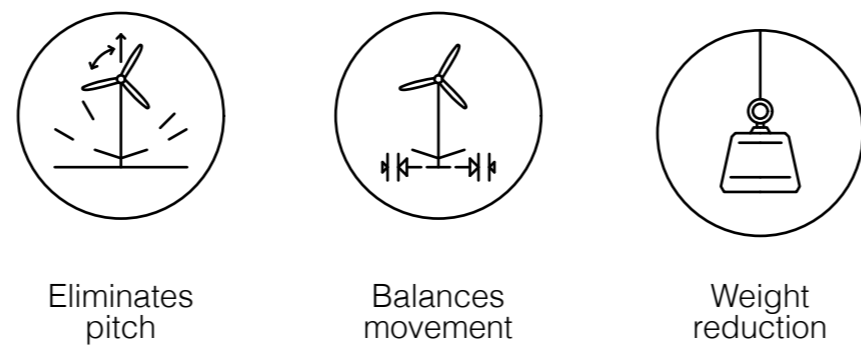
Our platform concept is based on the Gazelle system – an innovative offshore solution that combines the strengths of tension-leg platforms and semi-submersibles, without their weaknesses.

With a central counterweight and a tripod structure, the Gazelle reacts dynamically to wind and waves, keeping the pitch angle low and significantly reducing wear on the turbine components.

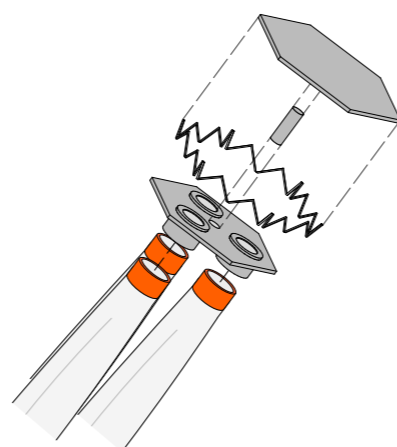


Technical Concept:

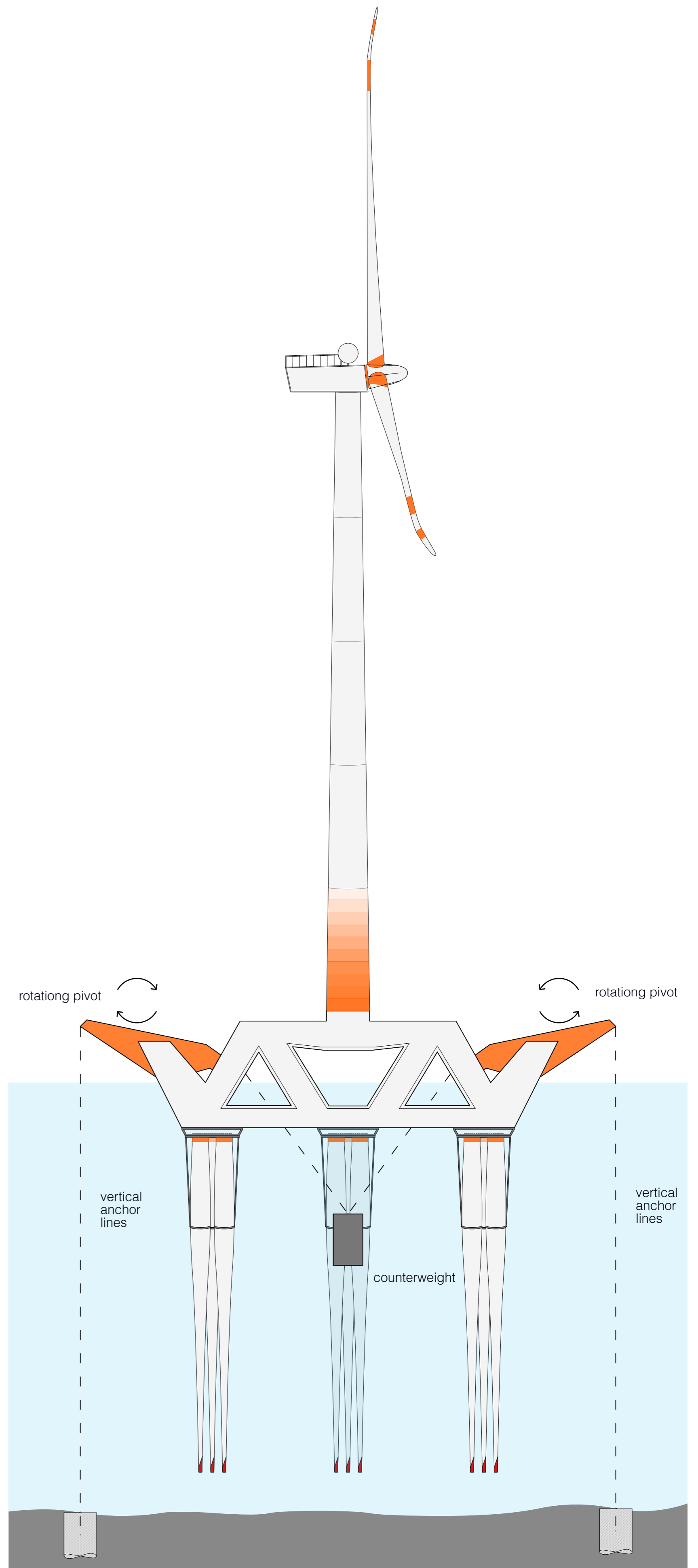
- Support Structure:** Gazelle platform using lightweight, modular parts
- Reinforcement:** Repurposed wind turbine blades are integrated into the design as structural elements
- Pitch <math><10^\circ</math>:** Less stress = less maintenance = longer turbine life
- Modular/Scalable:** Easy to assemble, transport, and adapt to demand
- Construction:** Construction needs less space in ports and shipyards



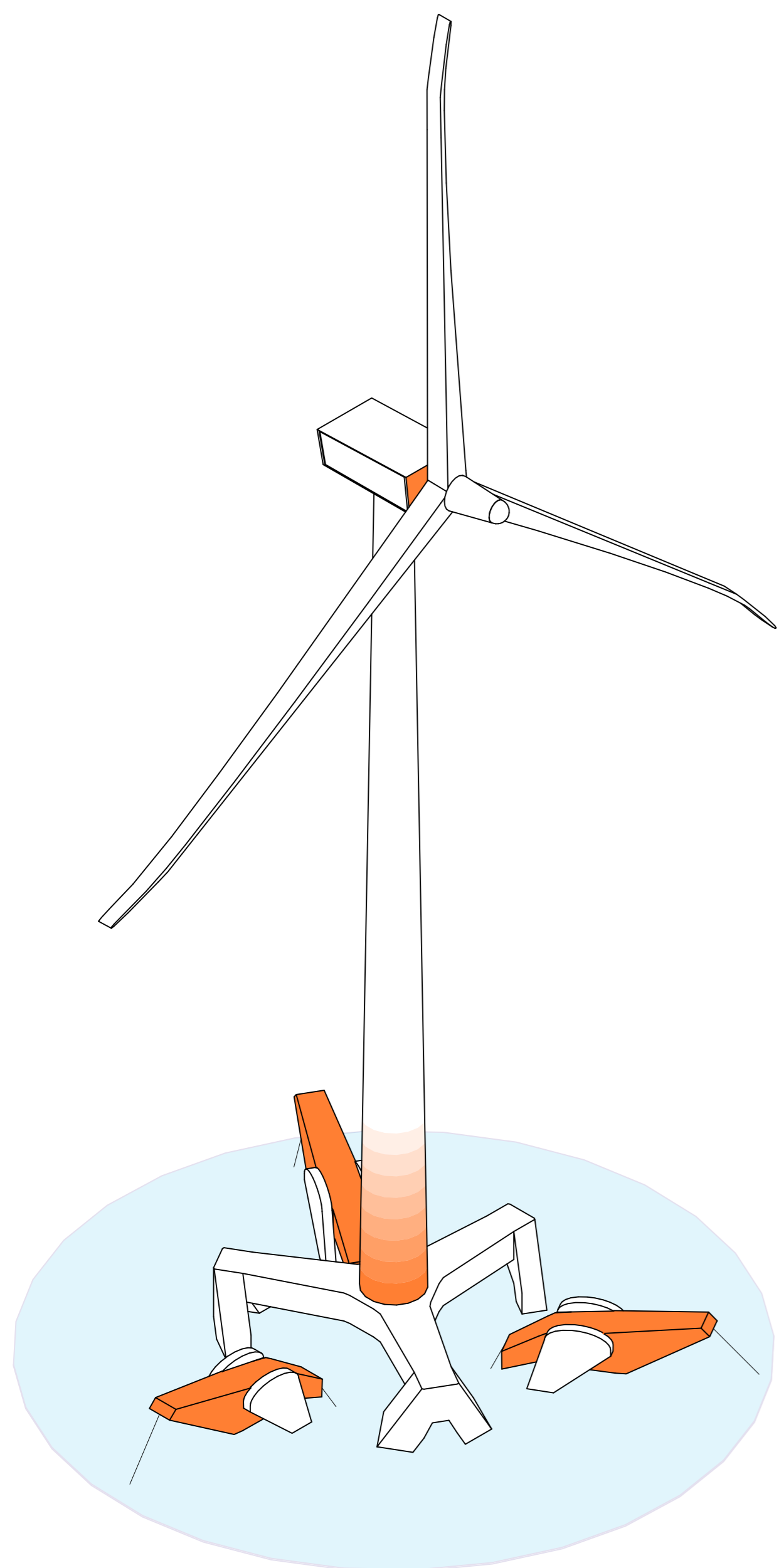
Rotor blade docking mechanism:



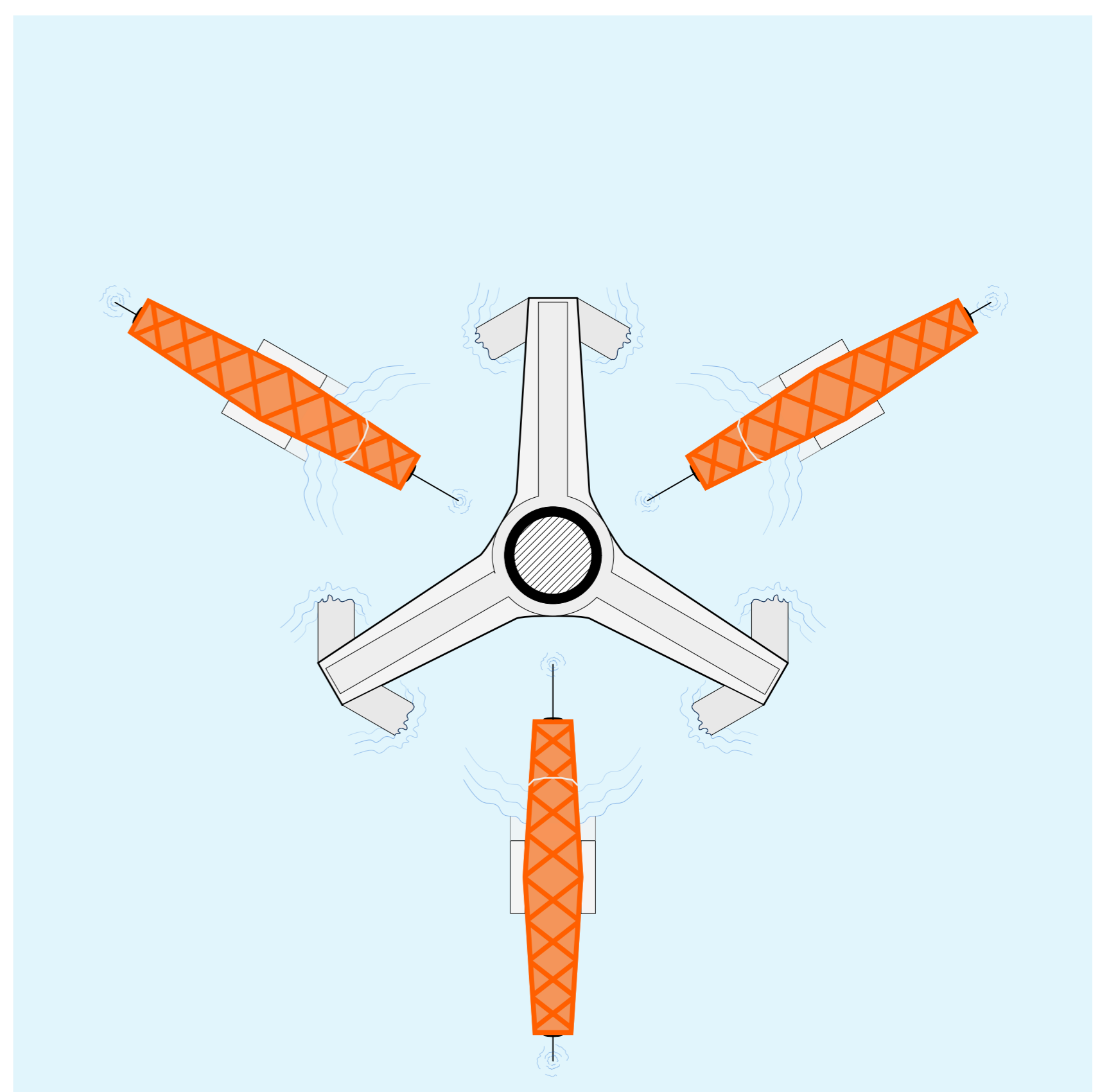
Recycling old wind turbine blades as part of the load-bearing structure
Modular parts are reusable and reduce the platform's overall environmental footprint



elevation view 1:200



perspective



plan view 1:200