Polytech
Wind for life™

Subsea

Standardized and innovative subsea solutions
to lower your costs and optimize your
logistics, installation, and operational activities.

Benefit from our renewable DNA

The offshore wind industry has adopted several subsea technologies from the oil and gas sector. But these are not optimized for the renewable setting, which leads to inefficient project delivery and higher project costs than necessary.

When choosing a subsea solution for your offshore turbines, you must therefore be mindful of these differences.

You must consider the operational practices, installation methods, and understand how these influence the material behavior.

Our subsea solutions consider all that.

We are currently the only supplier with a 30-year renewable DNA that offers these subsea solutions to finally solve some of the challenges you are facing.

The growing offshore wind capacity and power infrastructure bring a unique opportunity to the subsea industry.

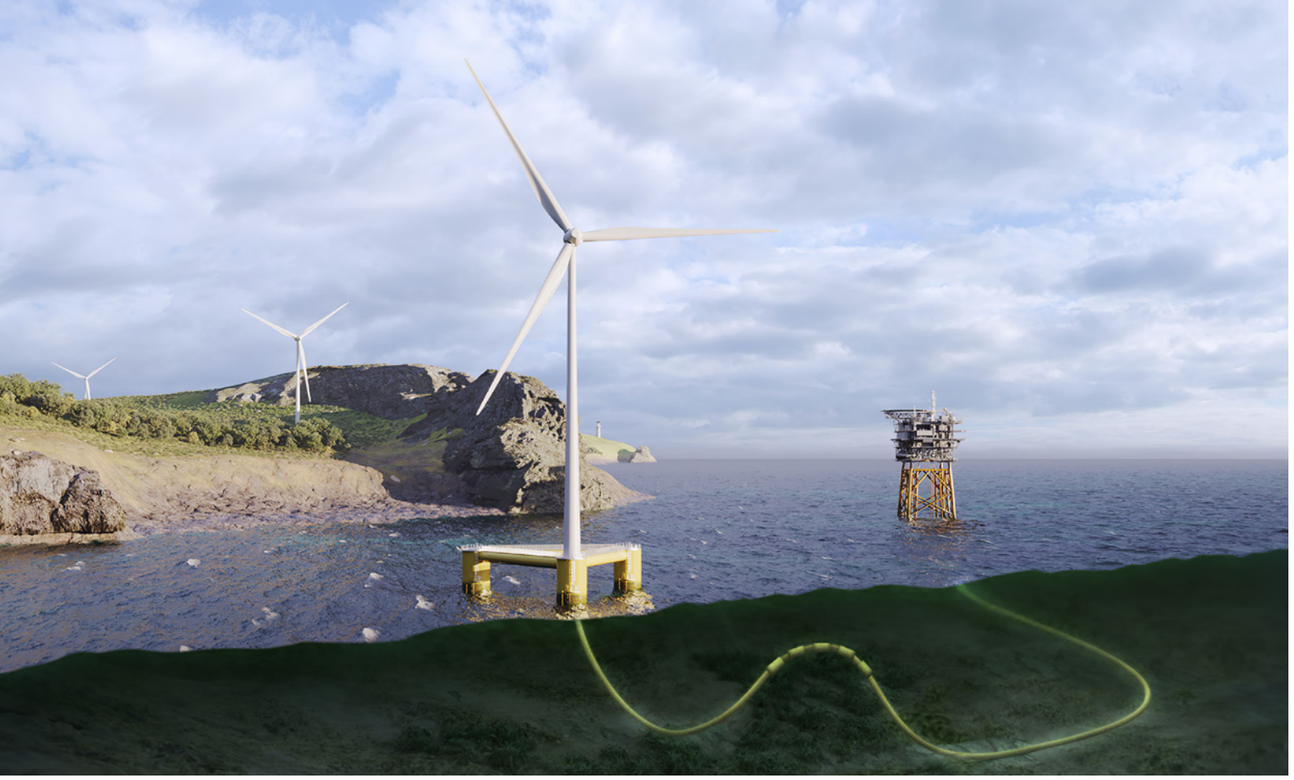
It is the perfect time to rethink existing designs, to remove challenges, and to bring innovative solutions into play. This is where our subsea solutions come in.

Standardization at subsea

Standardization is key to scale up fast without compromising on quality. We have therefore developed all our subsea solutions with standardization in mind.

Materials. All our materials have been tested and validated according to the latest international standards in accredited testing laboratories. This standardized material selection process frees up significant time in the design phase.

Design. We have developed standardized, fixed geometries that can work with a variety of cable diameters. This avoids customized designs and can therefore save you significant resources, reducing design review cycles and allows you faster time-to-market.



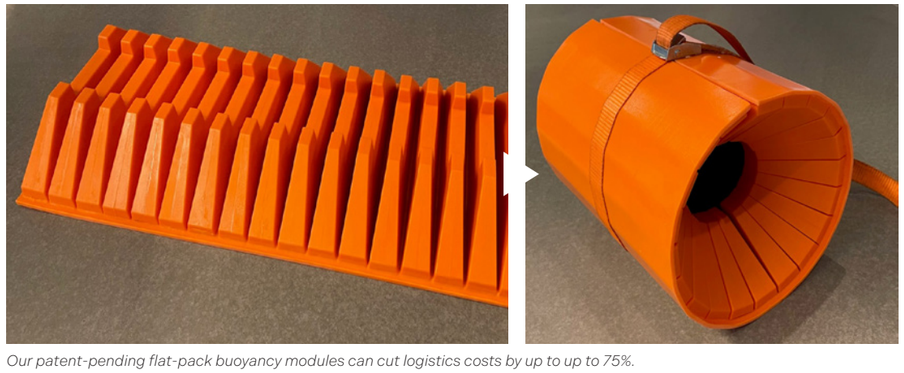
Subsea solutions from Polytech

Buoyancy modules

Buoyancy modules are key components of all floating subsea installations. They provide uplift and are essential to dynamic cable configurations. A floating wind park requires an average of 2,000* buoyancy modules per GW. Transporting and installing these modules requires a lot of resources and have a significant carbon footprint.

Up until now.

We are introducing flat-packed buoyancy modules. These modules from Polytech save significant container space and can therefore reduce your logistics costs by up to 75% and lead to significant carbon footprint reduction.

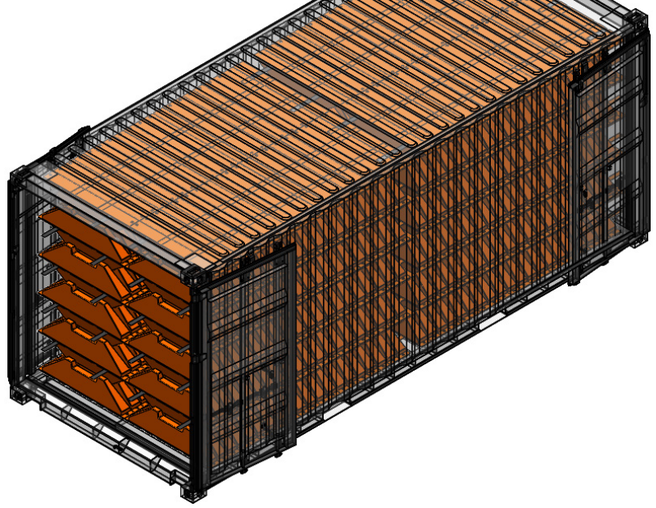


Our patent-pending flat-pack buoyancy modules can cut logistics costs by up to up to 75%.

* assuming a 15 MW wind turbine

Our patent-pending configuration also reduces installation time on the vessel. While traditional buoyancy modules are time intensive to install, our solution reduces this by up to 80%. You can therefore potentially save days of installation (vessel) time per GW for a floating wind park.

All our buoyancy modules are thoroughly tested and validated according to the latest international standards. As such, you can be assured of their reliability and durability under the entire operational lifetime.



Bend Stiffener Latching Mechanism

The bend stiffener latching mechanism (BSLM) attaches the bend stiffener to the floating structure. Its main purpose is to transfer the operational loads from the bend stiffener to the floater, and thereby protect the dynamic cable throughout the field life.

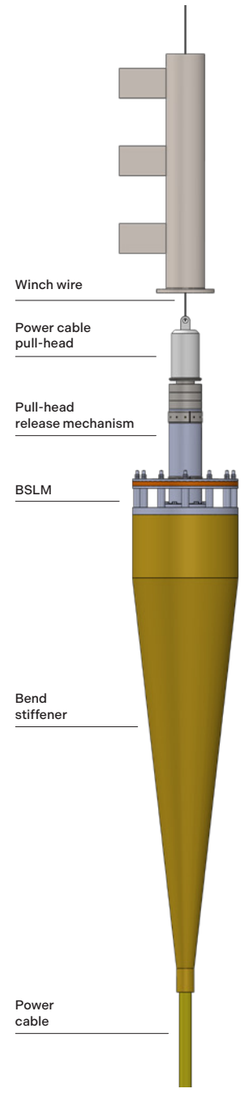
We bring an innovative approach to this crucial component. Our BSLM connects to a standard flange or bellmouth, so there is no need to install a specialized receptacle. This reduces part cost and eliminates the need to install additional components to the floater during the construction phase.

Our system allows a fully automatic connection and release to and from the floater. There are no ROV or divers needed, and you do not need to reset the components when the BSLM is released or re-installed. Our BSLM provides a simple and repeatable connection.

An additional benefit is that our BSLM can engage with other suppliers' receptacles, so you can reuse previously defunct floater connection ports. A future-proof concept giving you peace of mind.

We have removed complexity to make a more robust mechanism with our BSLM. This can also lower your operating costs and significantly reduce lead time by up to 70%.

Existing BSLM solutions	Polytech's BSLM
Requires diver and ROV to install or release	No ROV or divers = 100% automatic connection and release (subject to cable configuration)
Release or re-installation requires re-setting of components or additional items (e.g., ROV clamps)	No addition items and no re-setting required = 100% automatic connection and release
Specialized receptacle required	No special receptacle required = connects to standard I-tube /J-tube
Many moving parts	No moving parts = simple, robust, and repeatable connection
Affected by marine growth (it prevents unlatching and contribute to unplanned unlatching)	Unaffected by marine growth



Transmitting electricity over long distances
is essential in electricity trading
and ensuring a secure power supply

Subsea electrodes for HVDC cable links – Simulation & modelling

Subsea electrodes that use seawater as current path play a crucial role in this HVDC transmission.

Every HVDC subsea connection is unique. Its design must consider a variety of project-specific requirements, including the local environment.

How do the HVDC electrodes impact the surrounding structures? How well does the seawater and the seabed conduct the current at a specific site? How is the electric potential distributed in the area? How much corrosion of the cables do we expect?

Answers to these are essential to design and install secure and durable subsea electrodes.

We simulate and model subsea electrodes to give you the answers you need. Here, we assess the electric potential and stray current impact along the subsea cables and surrounding metal structures (e.g., pipelines). We also simulate the voltage, electric field strength, and current density distributions around the coastal electrode.

You can use the simulation results to optimize the electrode design and its location and choose the necessary cable lengths and cross sections. These will also help you optimize your project costs.

In addition, the electric potentials and fields produced by the subsea electrodes may affect people, local fauna, and nearby structures. As such, the simulation results can also support the feasibility study and impact assessments of your HVDC projects.

With Polytech you get a unique toolbox for all your subsea electrode projects thanks to our electrical, mechanical, and material engineering expertise. Top that with our renewable DNA, so you have a holistic approach to your subsea projects.

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Contact

Are you interested to learn more about our subsea solutions?
Then contact our Sales team at *polytech.com/contact*

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