

# Wind turbine cable release system





## Overview

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How does an offshore wind farm work?

Source: DNV. Fixed or floating, a typical commercial-scale offshore wind farm consists of an inter-array cable connecting the turbines to an offshore substation and an export cable connecting the offshore substation to shore (Figure 1 above). Inter-array cables are usually rated at a lower voltage than export cables.

Can wind turbines transmit electricity to a substation on land?

We have developed a dynamic cable system that stably transmits electric power from floating offshore wind turbines to a substation on land, and tested it in a demonstration project led by the Japanese Ministry of the Environment.

Why do offshore wind farms have more than one export cable?

Bottom-fixed offshore wind farms tend to have more than one export cable for redundancy. At the level of the FOWT, redundancy at the mooring lines can help preserve station-keeping and hence dynamic cable integrity. For example, a redundant mooring strategy (i.e. 3 x 2 legs) implies less risk to the cable in case of a single leg mooring failure.

What is a fixed offshore wind farm?

In a fixed offshore wind farm, the cables are static and mostly buried in the seabed. Nonetheless, a short portion of the cable right at the exit of the turbine or substation foundation (also fixed) is exposed to the water column and subject to loads (e.g. seabed movement, wave action, tidal current, scour).



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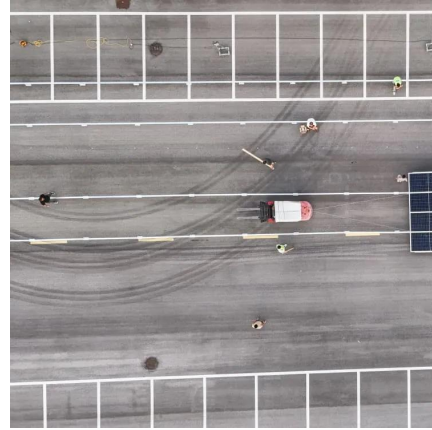
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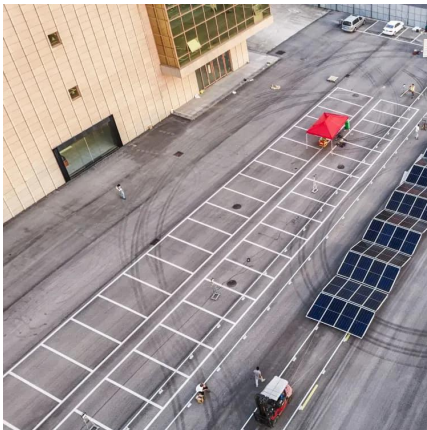
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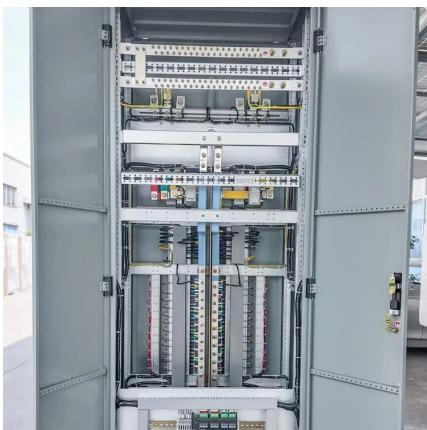
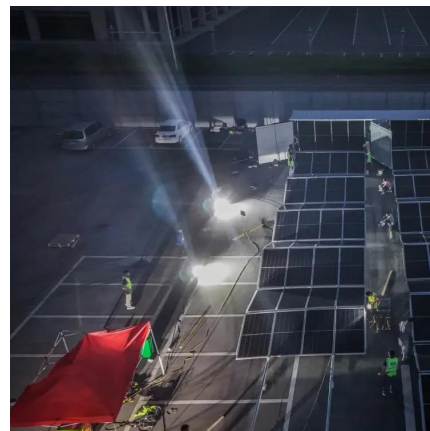


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