

Wind power cable release system





Overview

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.

Do floating wind projects need a different sized export cable?

Existing floating wind projects are small enough in power and relatively near shore to not require a wildly different sized export cable to inter-array cable. To satisfy future project requirements, manufacturers are working to qualify dynamic export cables of up to 220 kV.

How do ancillaries work in floating offshore wind?

In floating offshore wind, the dynamic sections of the cables are longer as they hang in the water column from the floater or floating substation, typically in a lazy-wave shape (Figure 2 below). Ancillaries help maintain the cable shape in the water column (lazy wave or other) and protect the connection points from overload and fatigue.

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.



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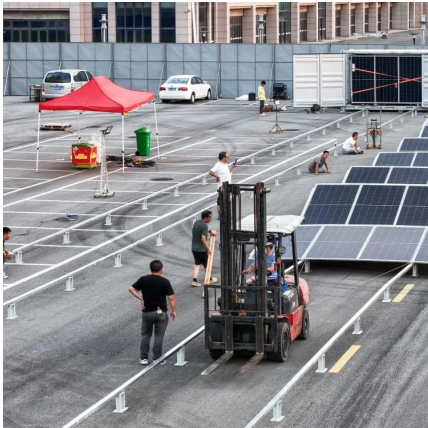
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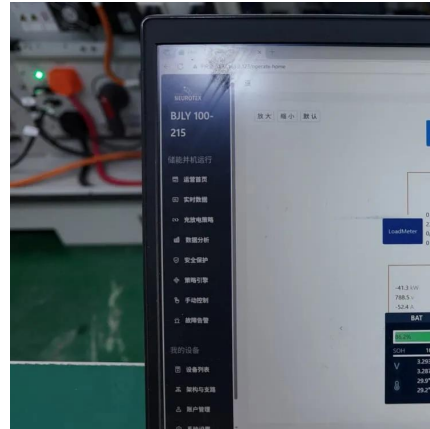
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