

HVDC & HVAC Cable Systems delivered on long length drums

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The need for connections and interconnections in the transmission network, HVAC and HVDC, has resulted in the selection of long links using underground cable systems.

An optimisation of the long links has led to the delivery of cables using long length drums for the following reasons:

- Decrease of the number of joints and related civil work
- Decrease of the number of drums
- Decrease of the number of trucks for transportation
- Decrease of the CO₂ footprint
- Increase of the flexibility for the joint-bay location
- Decrease the maintenance constraints
- Decrease of the laying operation time and mobilisation
- Decrease the number of jointing teams
- Decrease of the construction duration of the link

The authors will address the different issues that are necessary to make such a global optimisation successful.

Cable manufacturers and utilities have to perform a careful survey at the early stage of the project to prepare the works. During this engineering phase, the cable system components are selected, the best unit lengths of sectionalizing sections are defined.

Cable manufacturers have to evaluate and design the expansion areas to match thermo-mechanical forces.

In addition, cable manufacturers have made innovations on the cable system such as:

- Upgrading of manufacturing and testing facilities
- High capacity pulling eyes
- High side wall pressure resistant cables adapted to the long laying routes with curves and slopes
- Special accessories with high screen-to-earth withstand voltage
- Crane free and drum self-loading and unloading trailer
- New site motorized drum pay-off for high load capacity
- Improved pulling method for long length cables with high strength winch

Recent examples of such links will be given.