

Case note

Kabeldon cable cabinets for 36 kV from ABB Interconnecting and sectioning the wind farm



Electricians report that Kabeldon cable cabinets for 36 kV are easy to work with.

The forestry company Södra is building a wind farm consisting of 24 wind turbines close to their Mönsterås mill. Kabeldon cable cabinets for 36 kV, HDC-A, play an important role because they both interconnect and enable sectioning of the grid. Sectioning entails that selected parts of the grid can be disconnected with special earthing devices and tools that ensure that disconnected cables are earthed. The rest of the grid can thereafter be energized, thus limiting the number of subscribers affected by an interruption to service.

Everything in the Södra Group's world comes from the forest. Approximately 51,000 forest owners gain an outlet for their forestry raw materials through Södra, and this consequently provides the conditions for profitable forestry.

In recent years, Södra has also become a major producer of electricity and generates more than the company can use. And there will hardly be less production in the future, once the wind farm is completed. The first stage consists of six wind turbines, which will be put in service during the autumn of 2010. Three additional stages will follow for a total of 24 turbines.

Interconnecting and sectioning for increased operational reliability

"The reason for the customer choosing Kabeldon cable cabinets for 36 kV to interconnect the grid is because it is a financially good alternative. At the same time, the cabinets take little space," says Patrik Persson, project manager for Eitel Networks in Kristianstad. "The cabinets are also a good fit for wind power installations with consideration to the voltages present."

"Operational reliability increases when three wind turbines are connected together in a cabinet and the power then sent to a substation," says Carl-Erik Lindén from ABB. "Say a problem occurs on one of the turbines. The cable from that plant can

then be disconnected and earthed before corrective measures are begun. The others continue to produce electricity. This is why the cable cabinet for 36 kV is especially useful for wind farms.”

Safe and easy to work with

Eitel Networks has been commissioned to handle construction and installation of the power grid for the first part of the wind farm. A substation is also being built to which the wind turbines will be connected via four cable cabinets. The voltage from the grid is 36 kV, and transformed to 130 kV at the connection to the regional grid.

From each wind turbine, a three-conductor cable runs to a cable cabinet. Two wind turbines are connected in each cable cabinet. The cables’ three phases are connected in the cabinet with CSE-A cable connectors. From each of these cable cabinets, a three-conductor cable runs to yet another cable cabinet, where everything is tied together into three single-conductor cables that carry the current to the wind farm’s substation (see the figure).

By using a single cable cabinet as a branching point in the farm, there is no need to run separate cables from each of the wind turbines to the substation. This entails lower costs for among other things, excavation and cabling. A fifth cable cabinet is used as a joint above ground for further expansion of the wind farm.

Electricians from Eitel Networks appreciate the roomy interiors of the cable cabinets and that it is easy to fit cable connectors, both on the cables and in the cabinets. They also like the extra margin of safety provided by the cable cabinets and the cable connectors being touch-proof.

Financially beneficial

“It’s satisfying for us that the customer has chosen a smoothly functioning solution for wind farms,” says Carl-Erik Lindén. “The cable cabinets can be placed beneath the surface without excessive effort when it comes to excavation. And there is no need either for extensive excavation for jointing cables in the ground because they are now instead connected inside the cable cabinet, with good visibility, easy access and improved safety. Less excavation work also entails savings for the customer.”

Customer need

Sectioning of the grid.

Solution

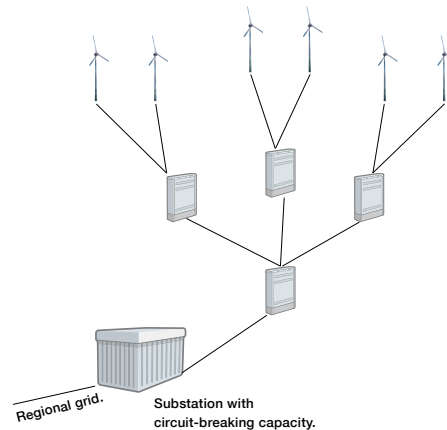
Cable cabinets for 36 kV, Kabeldon HDC-A 630.
Cable connectors for 36 kV, Kabeldon CSE-A.

Customer benefits

Safe and simple.
Surveyable.
Saves money and space.



Eitel Networks like the margin of safety provided by the cable cabinets and cable connectors being touch-proof.



General diagram for wind farms with cabinets for 36 kV serving as junction points.

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