

Press Release: ABB sets new power cable record in New York Harbor

2012-01-17 - ABB has completed the delivery and energization of the world's first cross-linked polyethylene (XLPE) insulated 345 kV AC submarine cable system. Extruded in a single continuous length without factory joints, the new cable system brings 512 megawatts of power generation capacity to the critical wholesale power market in New York City.

By [ABB Communications](#)

The ABB extra-high voltage cable system is part of the Bayonne Energy Center (BEC) power generation and transmission project, a new facility that will provide cleaner, more reliable power for Manhattan and the New York City power transmission network.

BEC comprises a new high-efficiency natural-gas fired power plant in Bayonne, New Jersey, that will generate up to 512 megawatts of electricity for transfer via the ABB cable system to a Con Edison substation in Gowanus, Brooklyn. The new power plant is scheduled to start production in the spring of 2012.

The cable system links the power plant to the substation and delivers the power at extra-high voltage (345 kV AC) across New York Harbor, close to Liberty Island and the famous Statue of Liberty.



The cable route of the ABB 345 kV cable system, with the southern tip of Manhattan in the top right-hand corner. The indirect route is due to the many shipping channels and anchorage areas in the busy harbor waters.

Completed and energized by ABB in December 2011, the system includes three single-core XLPE submarine cables, each 6.5 miles (10.4 km) in length, and two XLPE underground cable segments that connect the submarine cables to the power plant in Bayonne and the substation in Brooklyn, respectively.

The 6.5 mile submarine cables are the longest extruded extra-high voltage submarine AC power cables ever manufactured. Most extruded submarine AC cables have so far been at the 145 kV level or lower, including the world's longest submarine AC cable, which ABB is supplying for the Goliat floating oil and gas platform in the Barents Sea (the Goliat cable is 105 km in length and has a voltage rating of 123 kV).

BEC will reduce reliance on older, less efficient and less environmentally controlled generating units in the New York area.

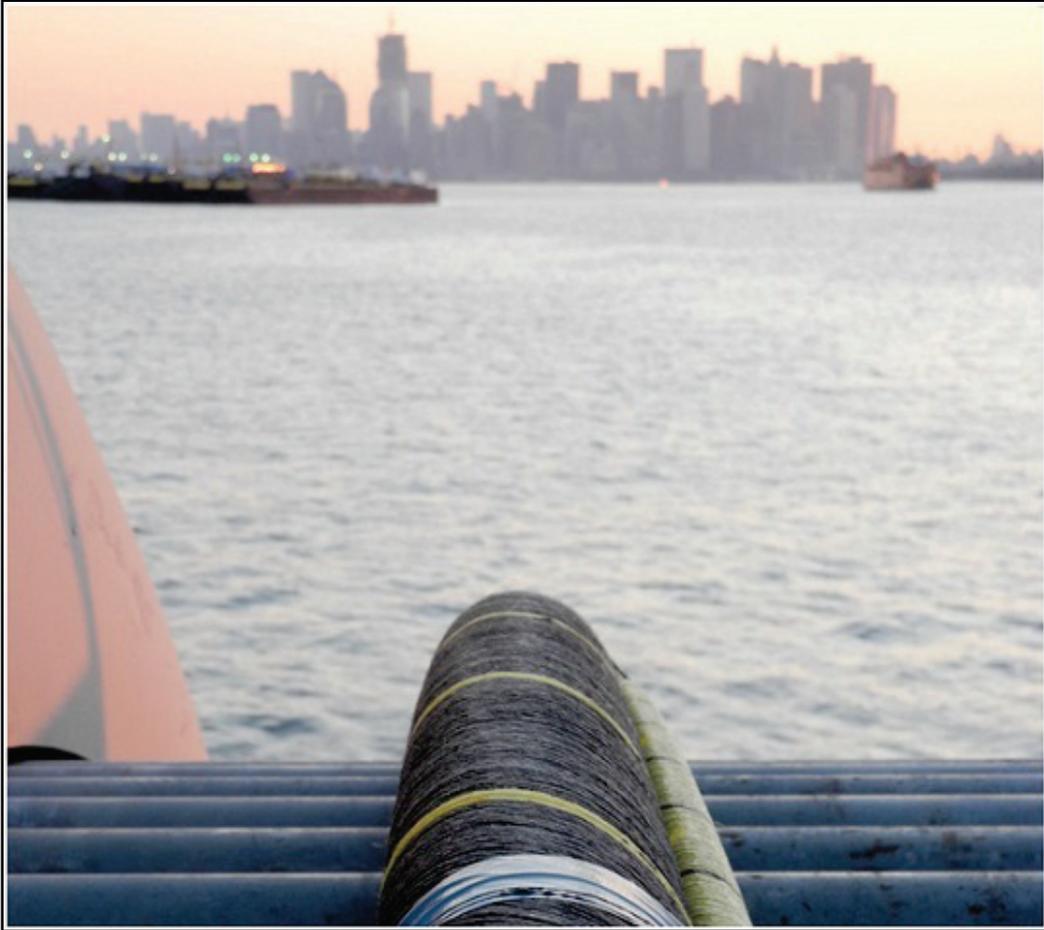
The ABB solution for Bayonne Energy Center is entering the record books for two other reasons as well.

In accordance with BEC's requirements, ABB manufactured each of the three 6.5 mile extruded cables in a single continuous length. Such a long extruded extra-high voltage AC cable without factory joints had never been attempted before. It requires exceptional levels of expertise at the cable factory, with no margin for error in the extrusion process which, for a cable of this length, takes more than 10 days.

Secondly, New York is a busy international sea port with freighters, cruise ships, ferries and tourist boats anchoring or operating in the harbor. To mitigate concerns about possible future dredging in the harbor and the risk of anchor damage, ABB was required to bury the cables at a depth of up to 15 feet (4.6 m), which is significantly deeper than the 3-6 feet burial required for most other submarine power cables. The water depth along the cable route in the harbor is on average about 20 m.

ABB was responsible for delivering a turnkey cable system including design, engineering, manufacture, field construction at the landfall sites, laying and installation, and commissioning.

The work at the landfall sites included construction of in-water cofferdams and horizontal directional drilling (HDD) in Brooklyn. The construction work at the landing sites and the laying of the cables were performed by a local New Jersey based firm (***Caldwell Marine International***) under a subcontract with ABB.



The cable was shipped from the ABB High Voltage Cables factory in Sweden to New Jersey, where it was transferred to a lay vessel. The cable was simultaneously laid and trenched using a jet-plow that was towed by the lay vessel.