



Appendix E. Representative Photos of Existing Projects

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Photos of the Neptune Project (clockwise from top left): The installation barge laying cable in New Jersey's Raritan River; conduit for installation of the DC land based cable is laid in trenches along the Wantagh Parkway on Long Island; the street view of Neptune's converter station in Sayreville, New Jersey and the interior view of the converter valve hall.





Photos of the Hudson Transmission Project (clockwise from top left): The hydro plow is lowered into New York's Hudson River prior to submarine cable burial; conduit installed under New Jersey's Bellman Creek by HDD transitions to duct bank burial; underground cable installation nears completion in a public right-of way in Fairview, New Jersey; the final phase of construction is underway at the Hudson back-to-back converter station in Ridgefield, New Jersey.



Hudson Transmission Project Goes Online Ahead of Schedule

Wed, 2013-06-05 11:06

[Hudson Transmission Partners, LLC](#) has completed testing of its underground and underwater, 660 MW electric transmission project between Ridgefield, New Jersey and Manhattan, and has begun delivering power to customers in New York City. The Hudson transmission project route has a total length of about 7.5 miles, with a cable bundle buried under the Hudson River for about 3.5 miles and buried underground for approximately four miles, starting in Ridgefield, New Jersey. The line connects to the Con Edison system at the West 49th Street substation in the heart of Manhattan and is capable of providing about five percent of New York City's peak demand. The project began construction in May 2011 at a cost of approximately \$850 million and was completed six weeks ahead of schedule, despite the two hurricanes that hit the area during the construction period.

The Hudson project is the second major underwater transmission project completed by PowerBridge, following the 660 MW Neptune undersea transmission project, completed in June of 2007, which extends 65 miles between New Jersey and Long Island. Neptune has supplied approximately 20 percent of Long Island's electricity needs since going into service. The Hudson and Neptune projects provide access to power from the PJM energy grid, one of the largest and most diverse power markets in the United States.

Using HVDC technology, the electricity drawn from the [PJM](#) grid is converted from AC to DC power, and then back to AC power, at a newly built converter station in Ridgefield, New Jersey, for the purpose of maximizing reliability and controllability in delivering power to Manhattan.

PROJECT FACTS

- Hudson Transmission Partners, the developer, owner and operator of the Hudson project, is responsible for its planning, permitting, financing, and construction. HTP is managed by PowerBridge, LLC of Fairfield, Connecticut. HTP partners also include Anbaric, LLC of Wakefield, Massachusetts and Triton, LLC of Portland, Maine.
- [Siemens Energy, Inc.](#) provided the design, engineering, construction and installation of the back-to-back HVDC converter station in Ridgefield, New Jersey. Siemens will also provide operation and maintenance services for project in conjunction with its operation of Neptune.
- [Prysmian Cables](#) and Systems USA, LLC supplied and installed the approximately 7.5 miles of 345 kV under water and underground cable that connects PJM with New York City.
- The Hudson cable bundle extends from the PSE&G Bergen substation in Ridgefield, NJ to the nearby HVDC converter station, and then travels approximately 3.5 miles underground to Edgewater, NJ where it enters the Hudson River. The cables make landfall on Manhattan's West Side between Piers 92 and 94, then travels a short distance from W. 52nd Street along the West Side Highway to the Con Edison West 49th Street substation.

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