SIEMENS

Fact Sheet

HVDC land-based station Büttel

Date: April 2015

Siemens has received orders from the German-Dutch network operator TenneT for implementing five North Sea grid connections. Combined, these grid connections have a transmission capacity of more than 3.8 gigawatts, which is enough to supply around five million German households with electricity generated from regenerative offshore wind power. More than half of this capacity is accommodated by the grid node Büttel, at which wind-based power for supplying around 2.5 million households is fed into the grid.

Technical data:

- Feed-in capacity: 2.1 gigawatts from three grid connections: SylWin1 (864 megawatts)
  HelWin1 (576 megawatts)
  HelWin2 (690 megawatts)
- Voltage: Input: +/- 250/320 kilovolts (DC/direct current)
  Output: 400 kilovolts (AC/alternating current) on land

- Dimensions:

Land-based station HelWin1:	Converter building 97m x 29m x 16m (L x W x H)
	Laterally installed braking unit 45m x 12m
Land-based station HelWin2:	Converter building 102m x 29m x 16m (L x W x H)
	Laterally installed braking unit 50m x 12m
Land-based station SylWin1:	Converter building 102m x 29m x 16m (L x W x H)
	Laterally installed braking unit 50m x 12m

The braking unit is a type of "buffer" that is used for short-term absorption of energy from the DC transmission system in the event of brief disturbances (< 1 second) in the 380kV land-based grid.