

HVDC for long distance transmission, submarine connections, connecting unsynchronized grids,...

LCC-HVDC. Since 1954

- Ca. 150 LCC-HVDC projects globally
- Up to 800 kV, 8000 MW



Hami – Zhengzhou 2210 km
2014 8000 MW / 800 kV

VSC-HVDC. Since 1999

- Ca. 20 projects commissioned in globally
- Up to 525 kV, 1400 MW
(Inelco 2 x 1000 MW)



EWIC. Ireland – UK 260 km
2013 500 MW / 200 kV

NordLink connecting TenneT and Statnett grids 623 km MI cable system and VSC-HVDC converters

Interconnecting Germany-Norway

- German wind and solar can be balanced with Norwegian hydro
- VSC to support grid connection points in Tonstad and Wilster



1400 MW Bipole

- 2 x 700 MW VSC-HVDC
- ± 515 kV IGBT-based converter valves
- ± 525 kV mass impregnated (MI) marine and underground cable system



Renewable power supply to 3.6 million German households by 2020

Fig. 1. <http://www.abb.com/press/press-releases/2015/nordlink-a-landmark-project-enabling-a-more-predictable-energy-supply>

Fig. 2. Skagerrak 700 MW VSC-HVDC valve

INTRODUCTION

- Friends of the Supergrid
- 14 companies, including
 - HVDC manufacturers
 - Cable manufacturers
 - TSOs
 - Project developers
 - Consultants
 - Logistics companies
 - Legal companies
- Promote the development of an interconnected electricity grid

