

Scibreak AB -- our journey from the KTH lab to *being part of a multinational* *corporation*

Staffan Norrga, August 2024

Grid Developments

Grids in transformation from top-down to distributed generation.

- More Renewables
- Offshore renewables
- EV/HEV charging
- Increase in variability!

Dramatic in some places, e.g. wind power in Denmark¹:
Average 42% / Peak 140%

Need for more transmission capability!

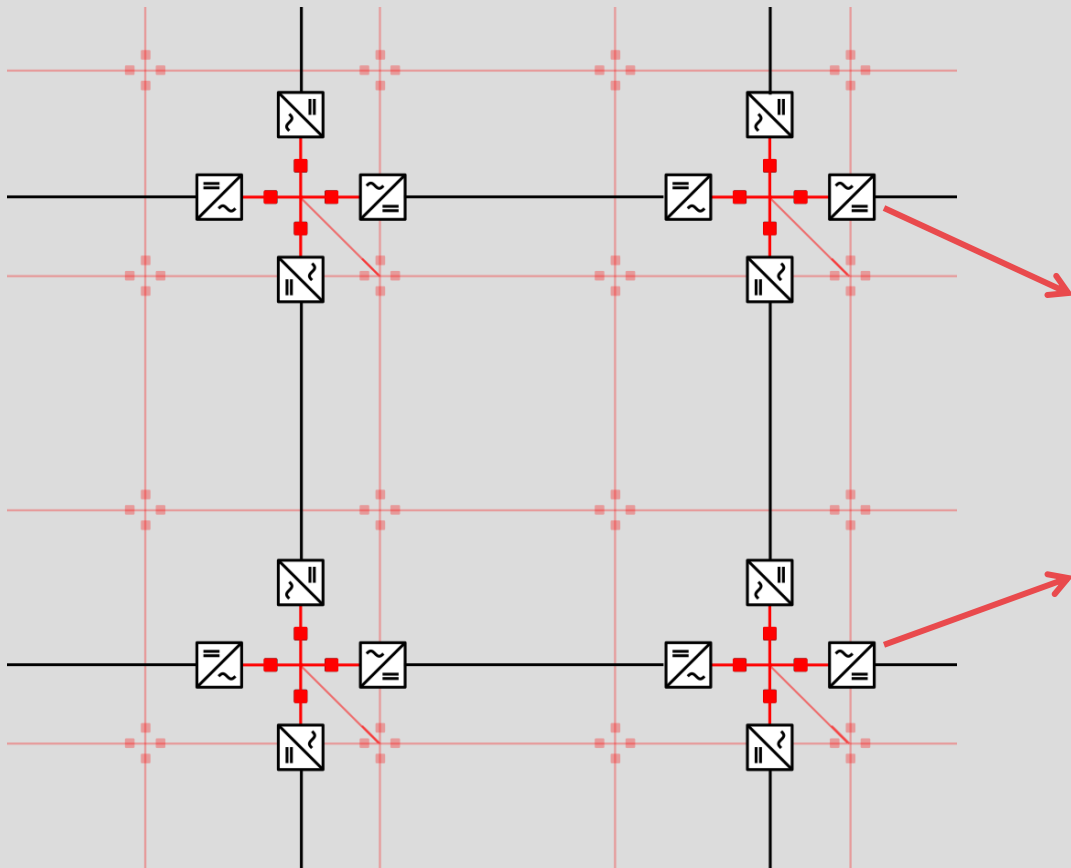
HVDC often the only option since it allows for **long cables.**



[1] A. Bloom *et al.*, "It's Indisputable: Five Facts About Planning and Operating Modern Power Systems," in *IEEE Power and Energy Magazine*, vol. 15, no. 6, pp. 22-30, Nov.-Dec. 2017.

DC and AC in the power system

— point-to-point connections

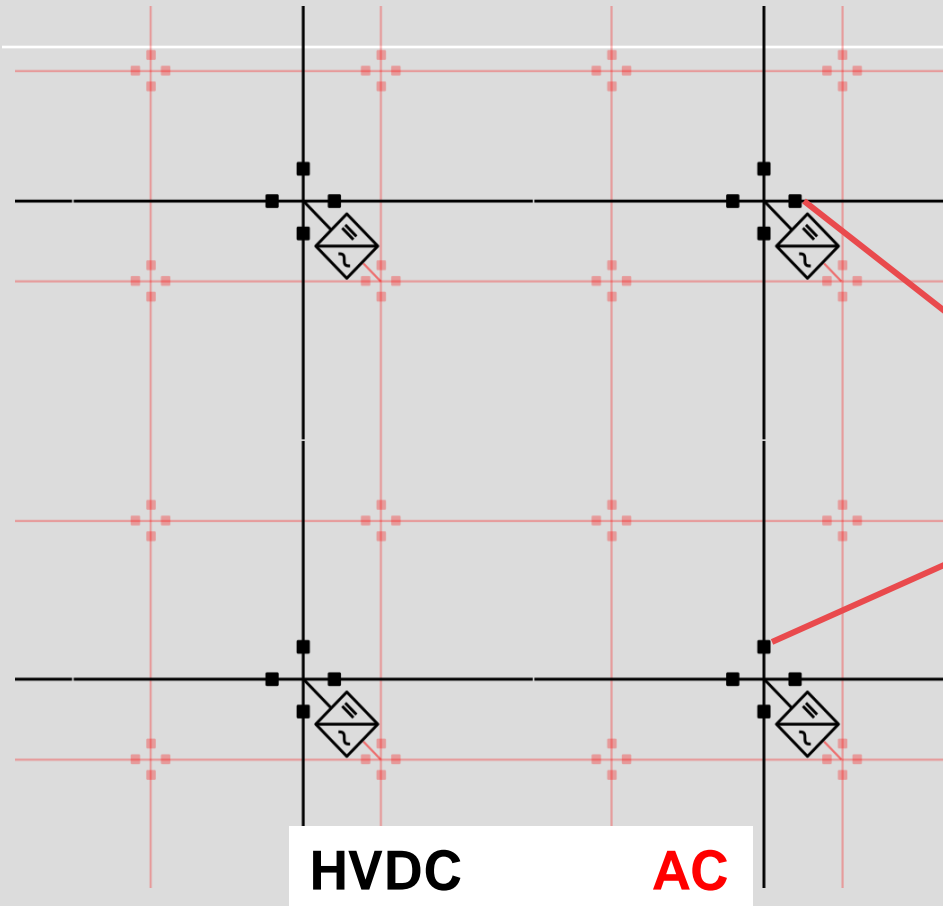


HVDC **AC**

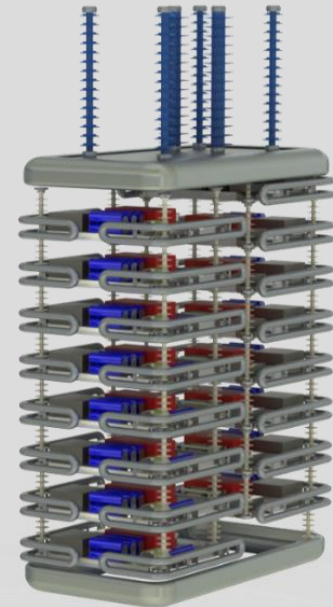


DC and AC in the power system

– HVDC grid



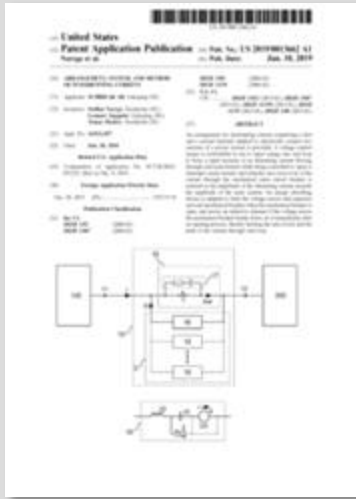
Much fewer converters
but
DC grid protection
is needed



VARC DC Circuit Breaker

The HVDC grid reduces converter cost and footprint.

Brief history of Scibreak



2014

- Company founded
- First patent application filed

2017

- Move to Kallhäll
- Scibreak joins Promotion EU project

2020

- Scibreak demonstrates fastest breaker in PROMOTiON project
- Scibreak awarded 3.7 M€ project by Trafikverket

2022

- First VARC customer installation

2023

- Acquired by

