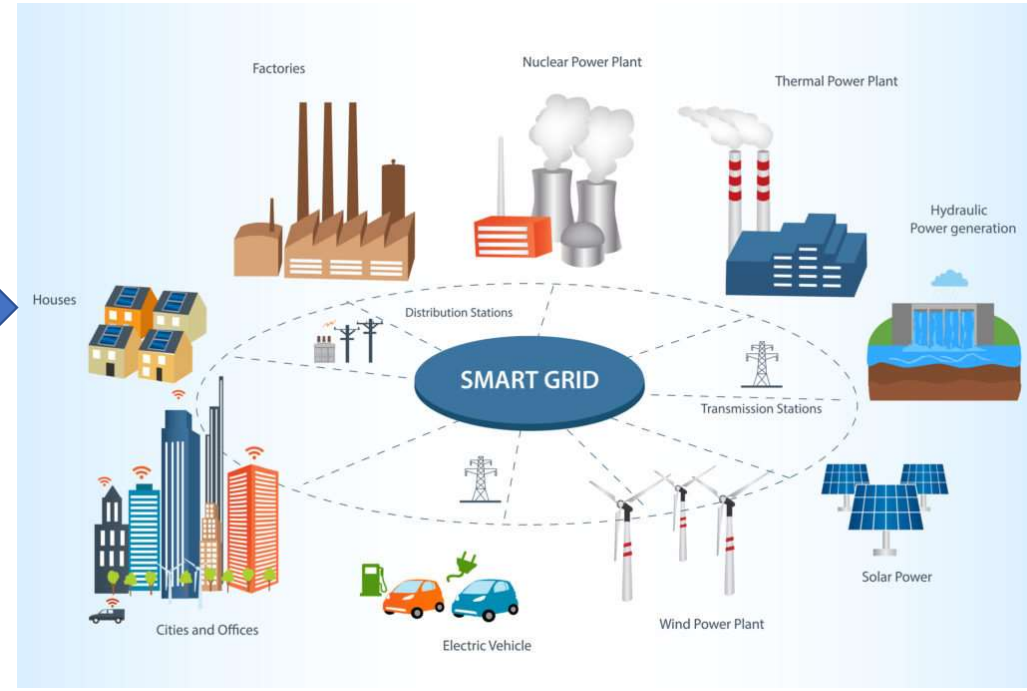
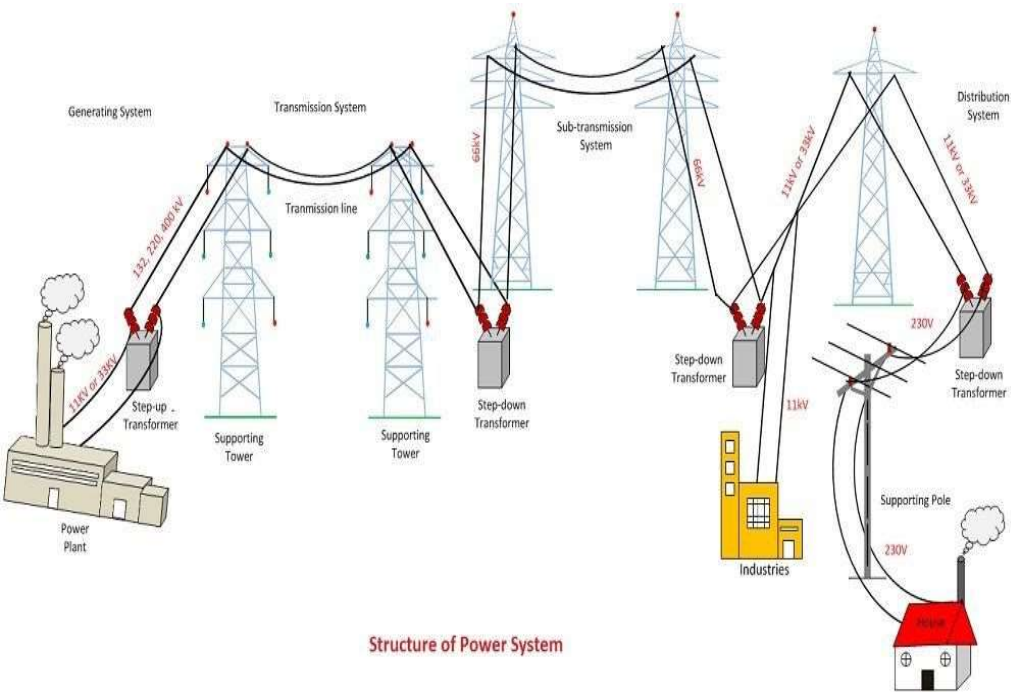


# Yenilenebilir Enerjinin Geleceđi: Enerji Adaları, Yüzer Rüzgar Santrali, HVDC ve Power-to-X

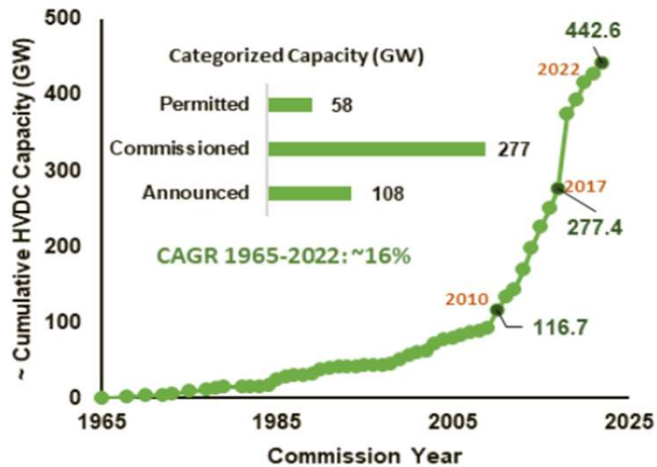
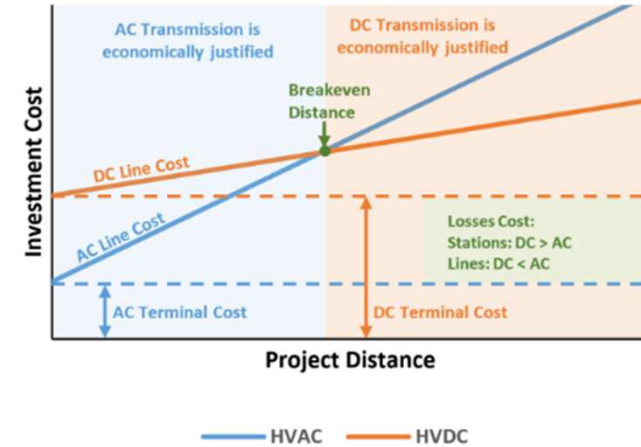
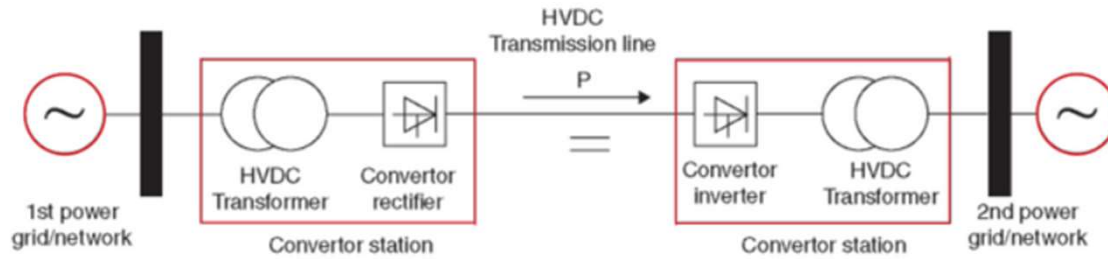




## Basit Güç Sistemlerinden → Kompleks Güç sistemlerine geçiş



# HVDC



## HVDC Converter blocks contain:

### 1) AC/DC – DC/AC Converters

#### Used Topologies:

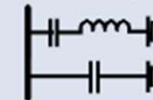
- Line Commutated Converters (LCC)
- Voltage Source Converters (VSC)

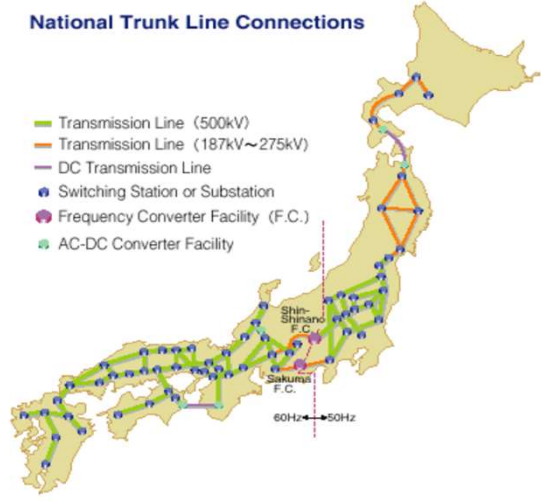
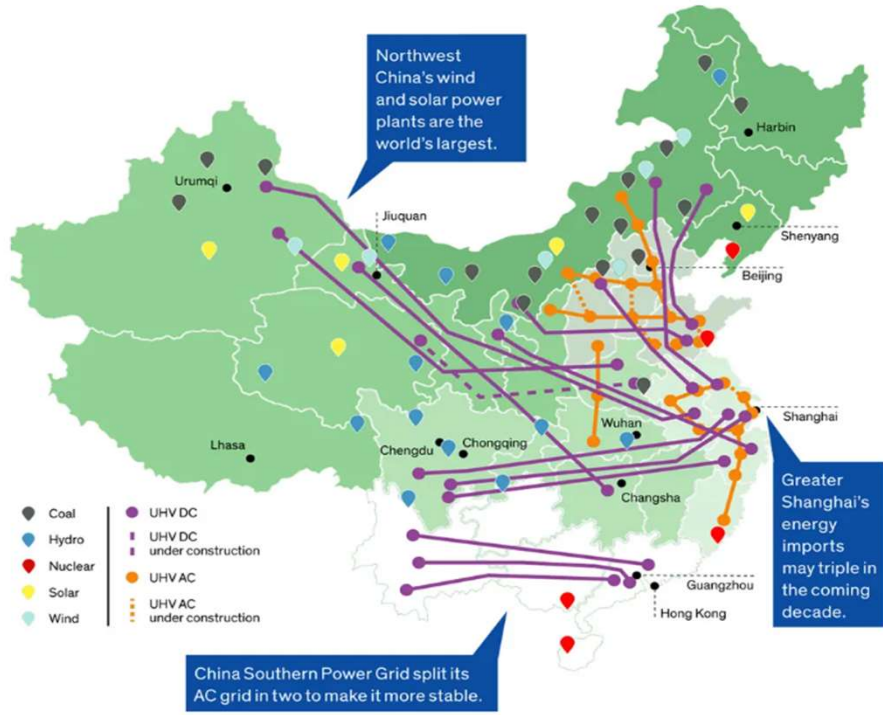
Thyristor Based  
(old technology,  
well established)

IGBT Based  
(newer technology,  
great potential)

### 2) Reactive Power Support & Filtering Equipment (e.g. LC & C banks)

- Maintains grid codes requirement (pf & harmonics).
- Provides ancillary power services to grid.





The world's first DC-grid with HVDC Light



Commissioning year	2019
Power rating	1,500 MW
# of stations in grid	4
# of poles/station	2
AC voltage	230 kV (Kangbao)
DC voltage	±500 kV
Length of DC overhead line	DC-grid total length 648 km



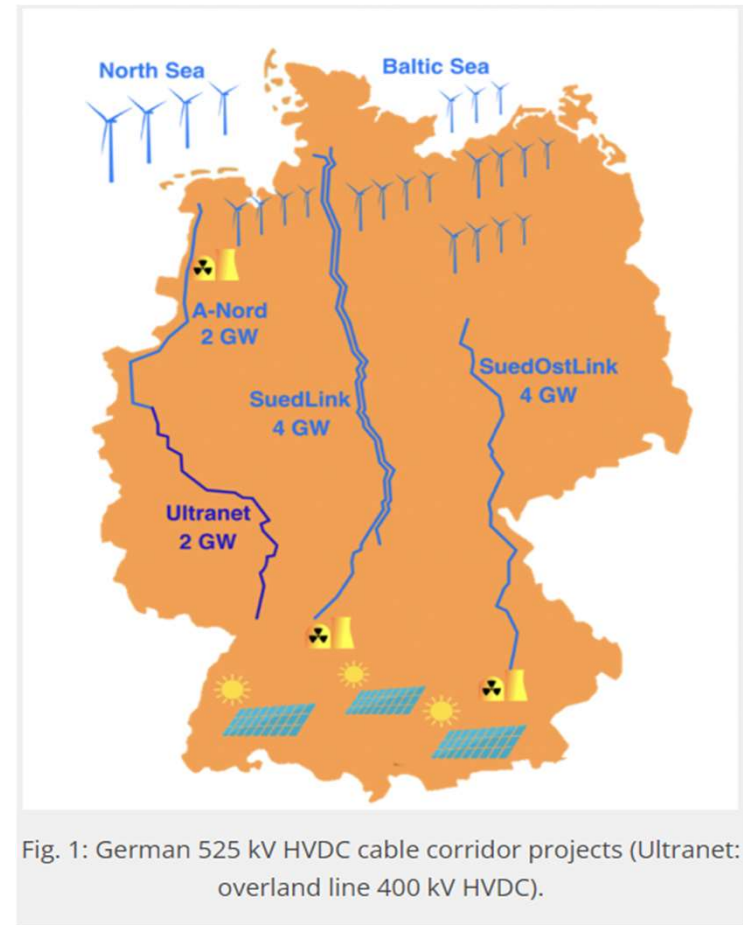
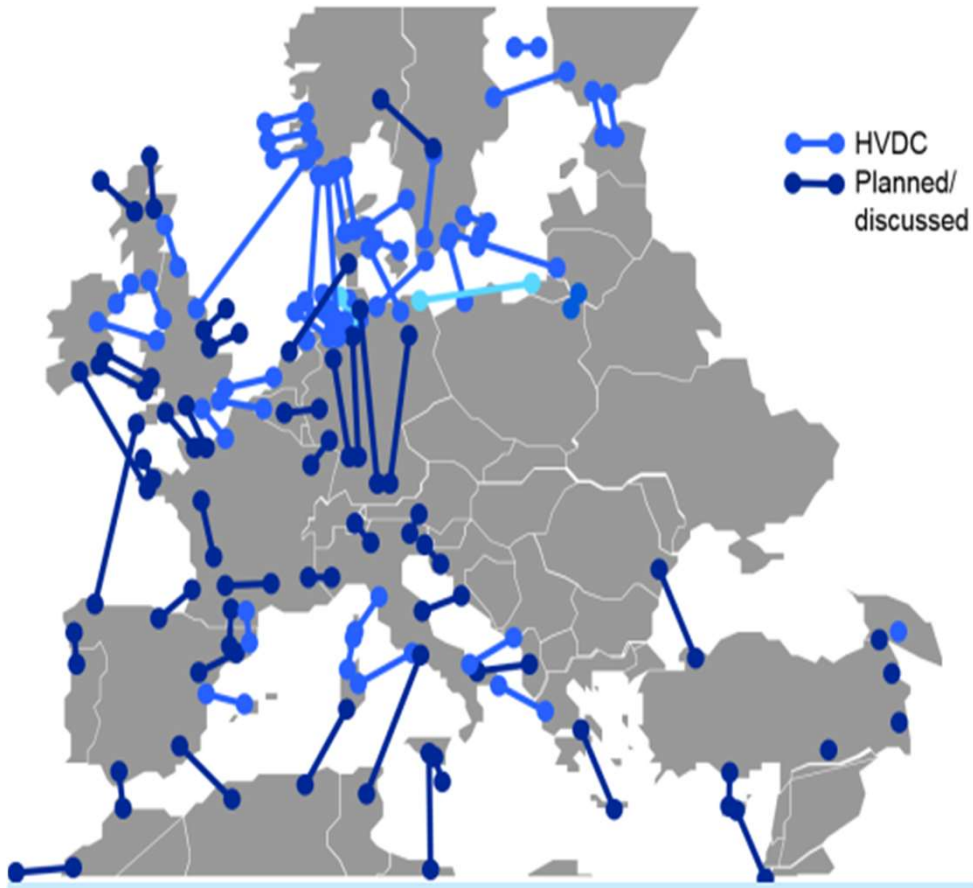
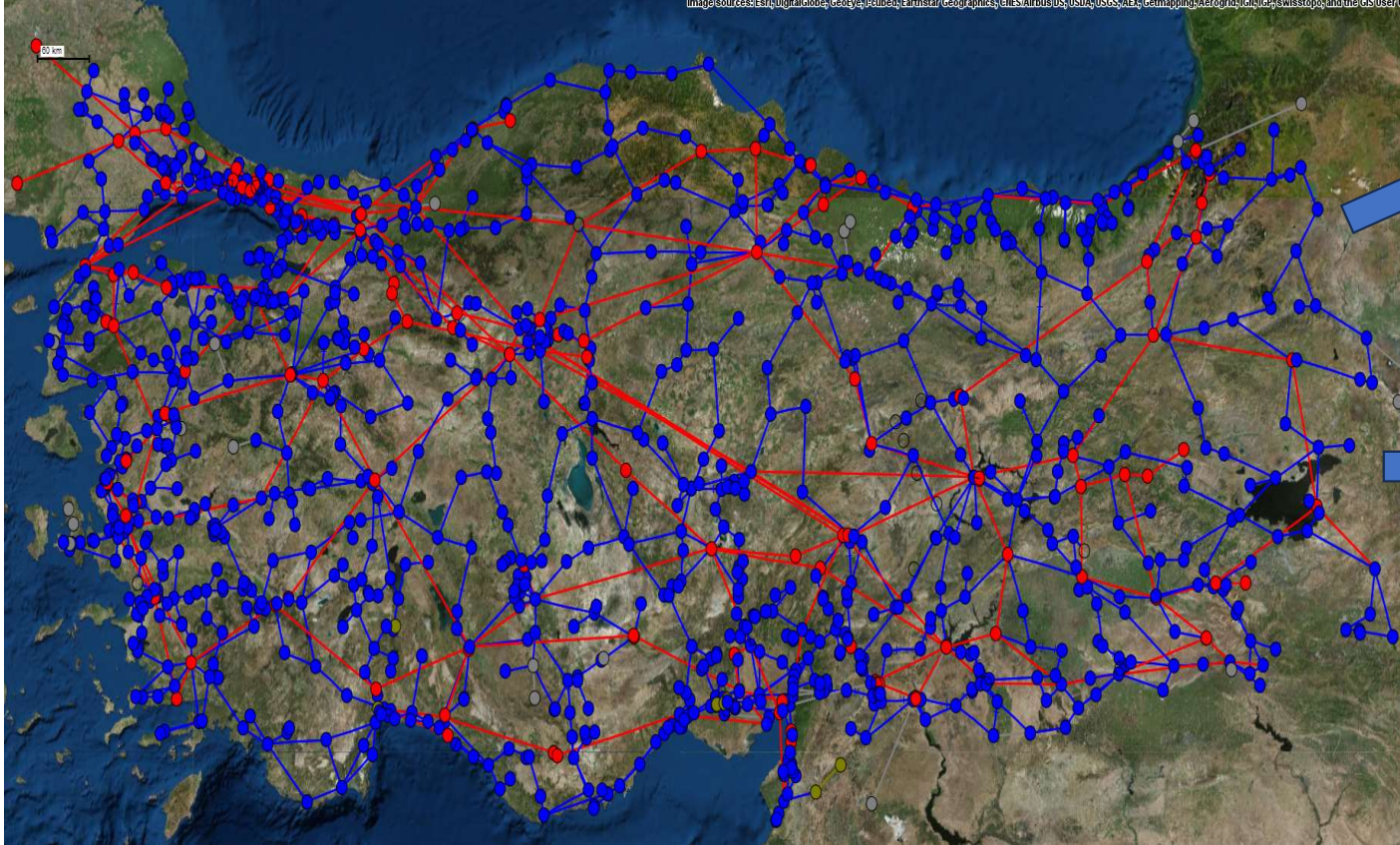


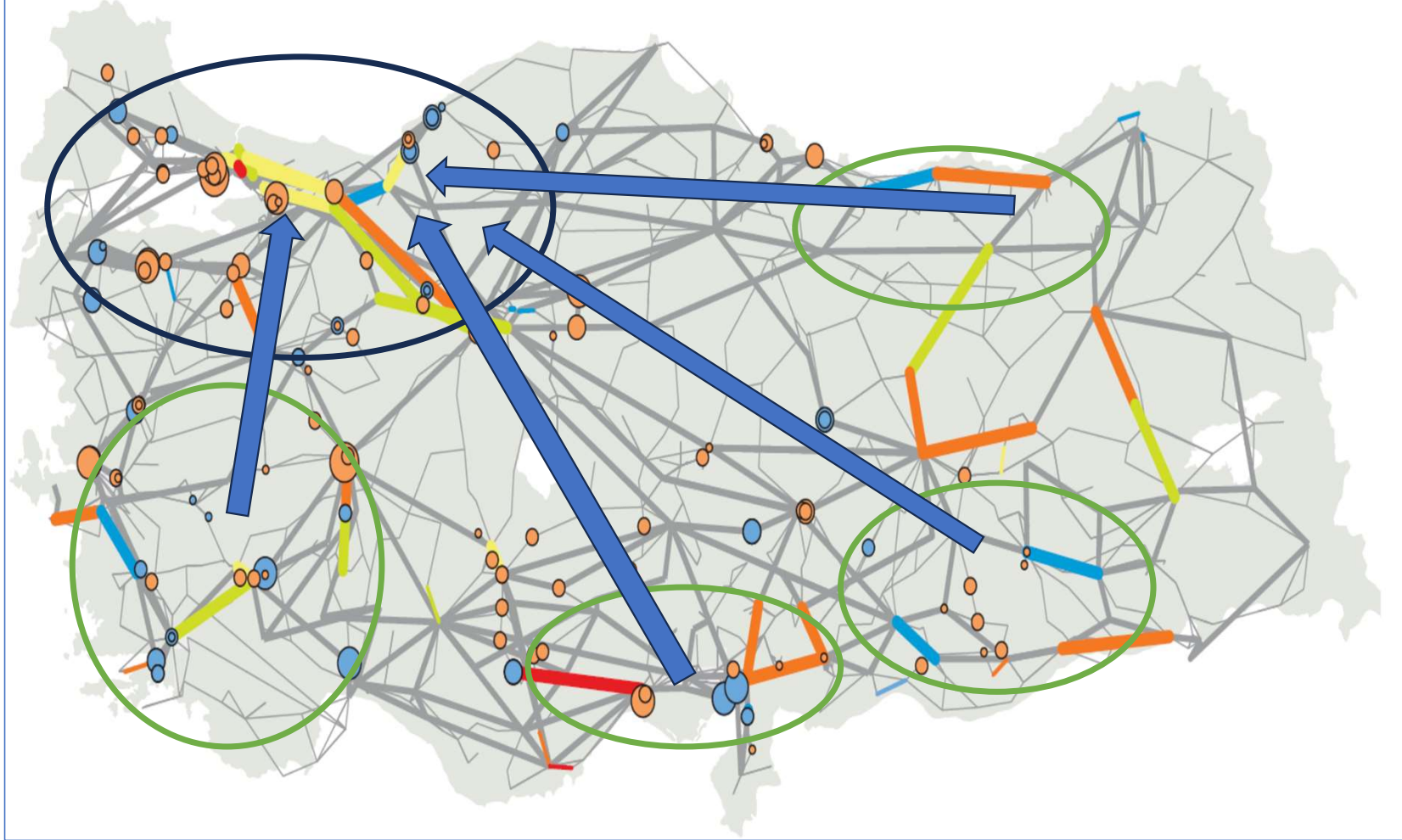
Fig. 1: German 525 kV HVDC cable corridor projects (Ultranet: overland line 400 kV HVDC).

## İletim Şebekesi ve Mevcut HVDC bağlantılar



Türkiye - Gürcistan (700MW Kapasite)

Türkiye-İran (600MW Kapasite)





## TEŞEKKÜRLER

Merden YEŞİL  
Güç Sistemleri Direktörü