



Gestionnaire
du Réseau de Transport d'Electricité

Economical aspects for RTE grid



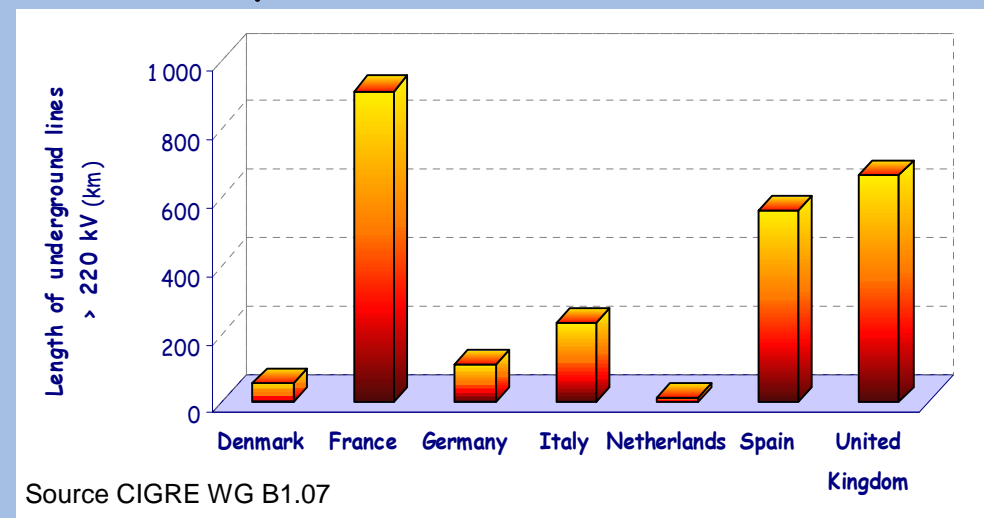
The French Transmission System Operator Data

→ RTE data

- 8300 employees, including 6000 in operating, maintenance and engineering activities
- 4 billions euros turnover/year
- 600-700 millions euros investment/year

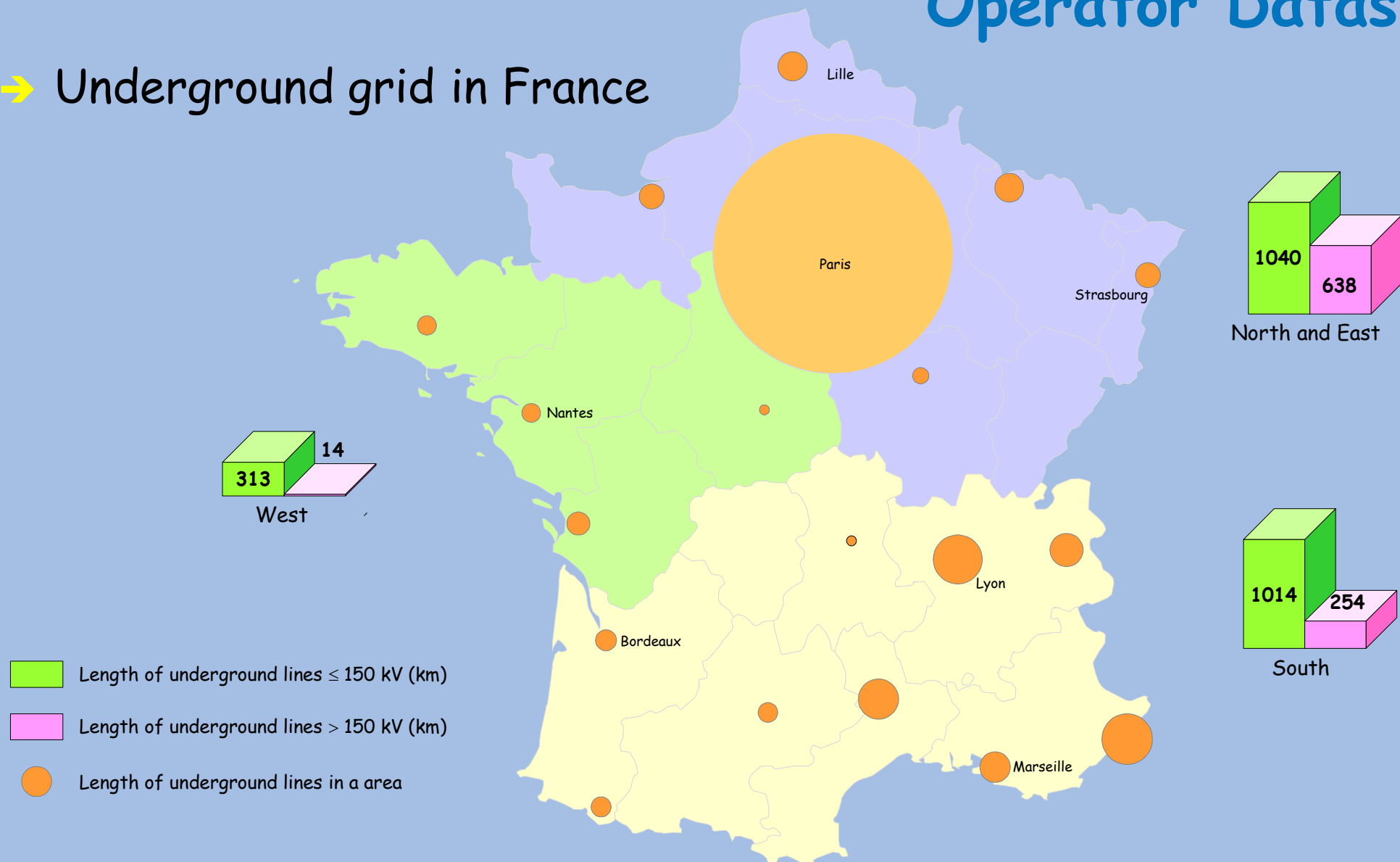
→ Underground lines data

- The underground network (> 50 kV) represents 3260 km
- RTE EHV grid:
3rd in the world and
1st in Europe with 906 km
- The 1st utility to recommend
extruded PE
and Al sheath cable



The French Transmission System Operator Datas

→ Underground grid in France



Grid development difficulties

→ Needs of grid development for:

- Connecting new generations
- Increasing national consumption

→ Context for lines construction :

- Technical difficulties
- Environmental constraints
- Societal problems, side residents opposition
- Long administrative modalities
- **Costs**

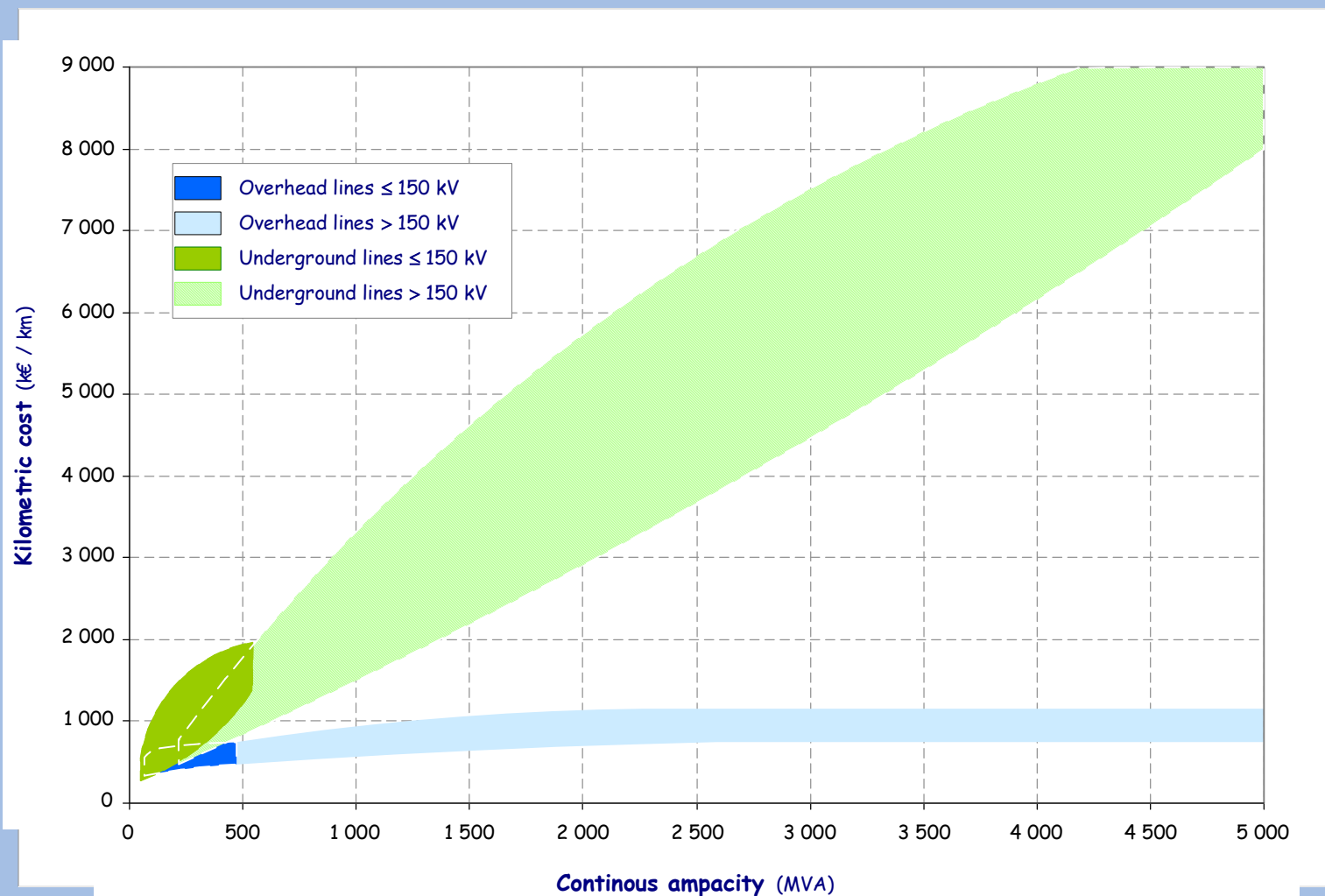
An "in service experience" about costs

- National "in service experience" method to analyse and to have a better knowledge of costs elements according to:
 - The voltage level
 - The ampacity need
 - The geographical environment
 - The laying conditions

- International comparison with other utilities projects

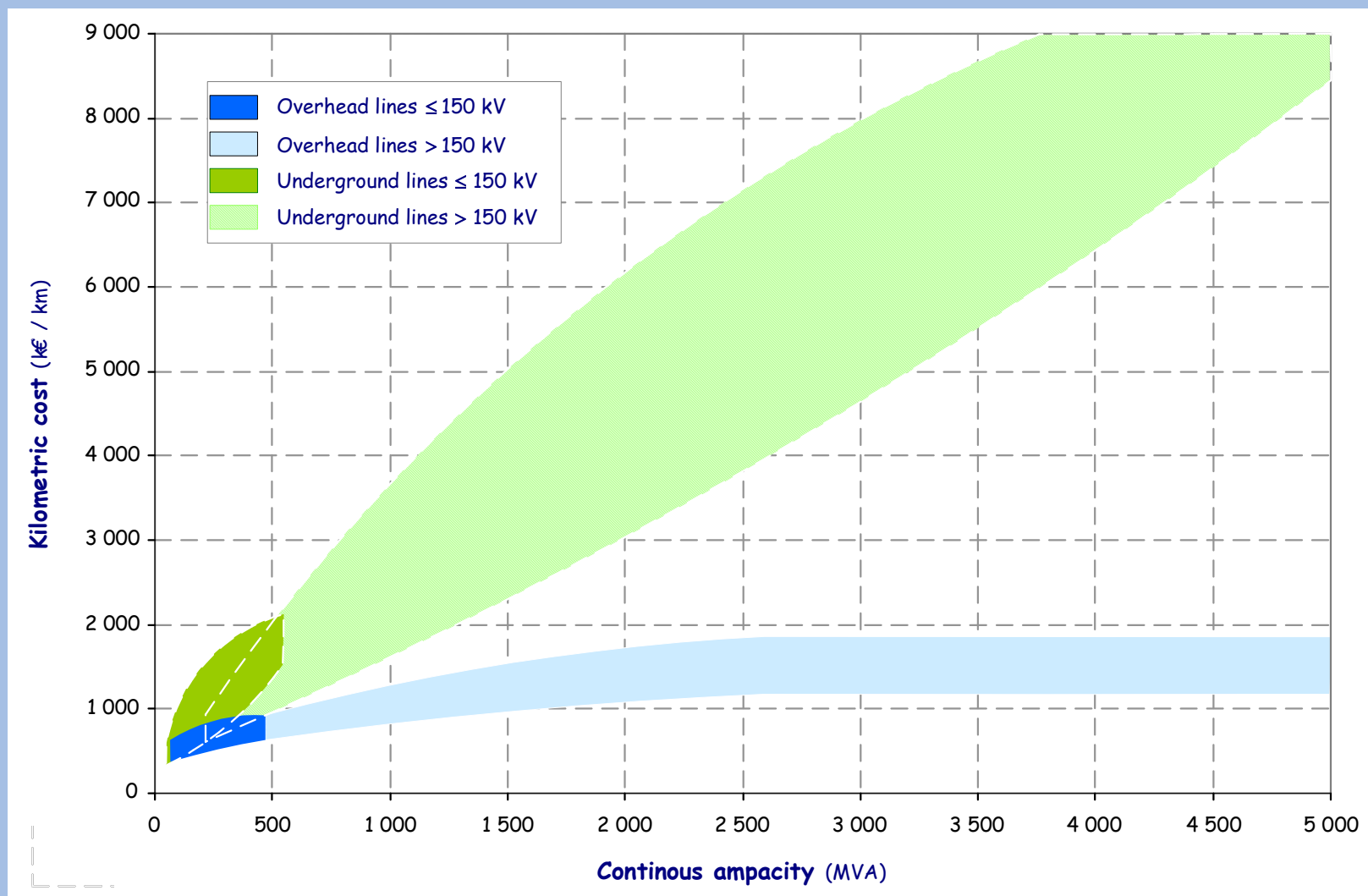
Results on costs

→ investment costs (without reactive compensation, and art work)



Results on costs

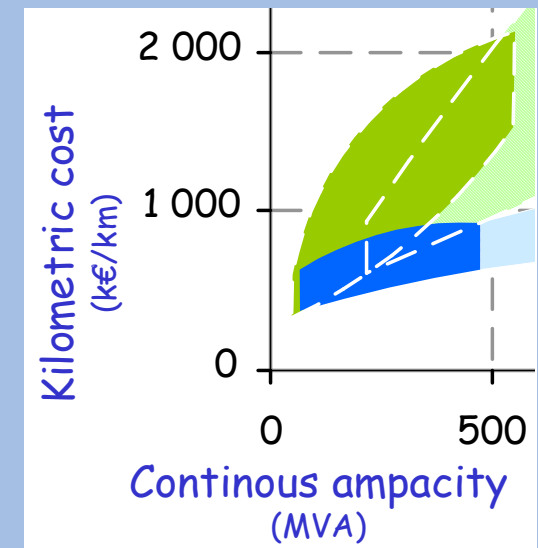
→ global costs (without reactive compensation, and art work)



Conclusion

→ Costs comparison

- Ampacity ≤ 500 MVA, UGC cost not "far" from OHL cost
- Ampacity > 500 MVA, UGC cost is much higher than OHL one



→ Underground line is economically interesting when the risk analyses taking in account all the concerns shows the worthiness

- *Environmental constraints, societal problems, long delay*
- *Laying technical problems*