



Association Grand Projects

## Workshop TGEG'18

### Technologies for Global Energy Grid

Organization: Association Grand Projects'21- AGP'21

President: Lucien Deschamps

With Technical and Scientific support of:



CIGRE, International Council on Large Electric Systems,  
Jicable, International Conference on Insulated Power Cables  
SEE, Society of Electricity, Electronics and Information Technologies and Communication

### Topics

- 1) World geographic distribution of resources and energy needs by the year 2030 and 2050. Overview of Generation Technologies, Energy storage technologies.
- 2) Expression of the future network requirements  
Why a world energy transmission system?  
Evolutionary steps of a global energy network between 2030 and 2050,  
Case studies: regional sub-systems, main links building up continental or intercontinental energy 'skeleton', SuperGrid, ...
- 3) interconnection characteristics of a world transmission system  
Different vectors of power transmission: comparison criteria,  
Transmission power capacities, transmission distances,  
Targets: economics, availability, environmental constraints,  
Integrated links: energy + communication + transportation of passengers or material, smart grid technologies,
- 4) Technical and economical comparison between isolated cables, overhead lines and other techniques and possible vectors of power transmission,  
Extrapolation of classical A.C. and D.C terrestrial and submarine technologies,
- 5) Advanced technologies, which could be envisaged for electrical links:  
Superconducting technologies, cable based on MgB2 .....  
Gas-insulated cables,  
Other new technologies,
- 6) Other vectors of power transmission,  
Microwaves: waves guides, WPT, Lasers,  
Hydrogen, current + Hydrogen,  
Natural gas  
Case studies.

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Thursday, June 21st, 2018