



Fig. 1: Layers of Network

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|----------------------------|---|
| 1. Layer: Local | City
(e. g. Frankfurt, Munich) |
| 2. Layer: Regional | Utility
(e. g. RWE, Bayernwerk, PreussenElektra) |
| 3. Layer: National | State
(e. g. Germany, EDF, ENEL) |
| 4. Layer: International | Interconnected Networks
(e. g. UCTE, NORDEL, MAGHREB) |
| 5. Layer: Intercontinental | Intercontinental Network
(e. g. Europe, Africa, Asia, America) |



Fig. 2: System Cost of 420 kV Cable, OHL and GIL Installations

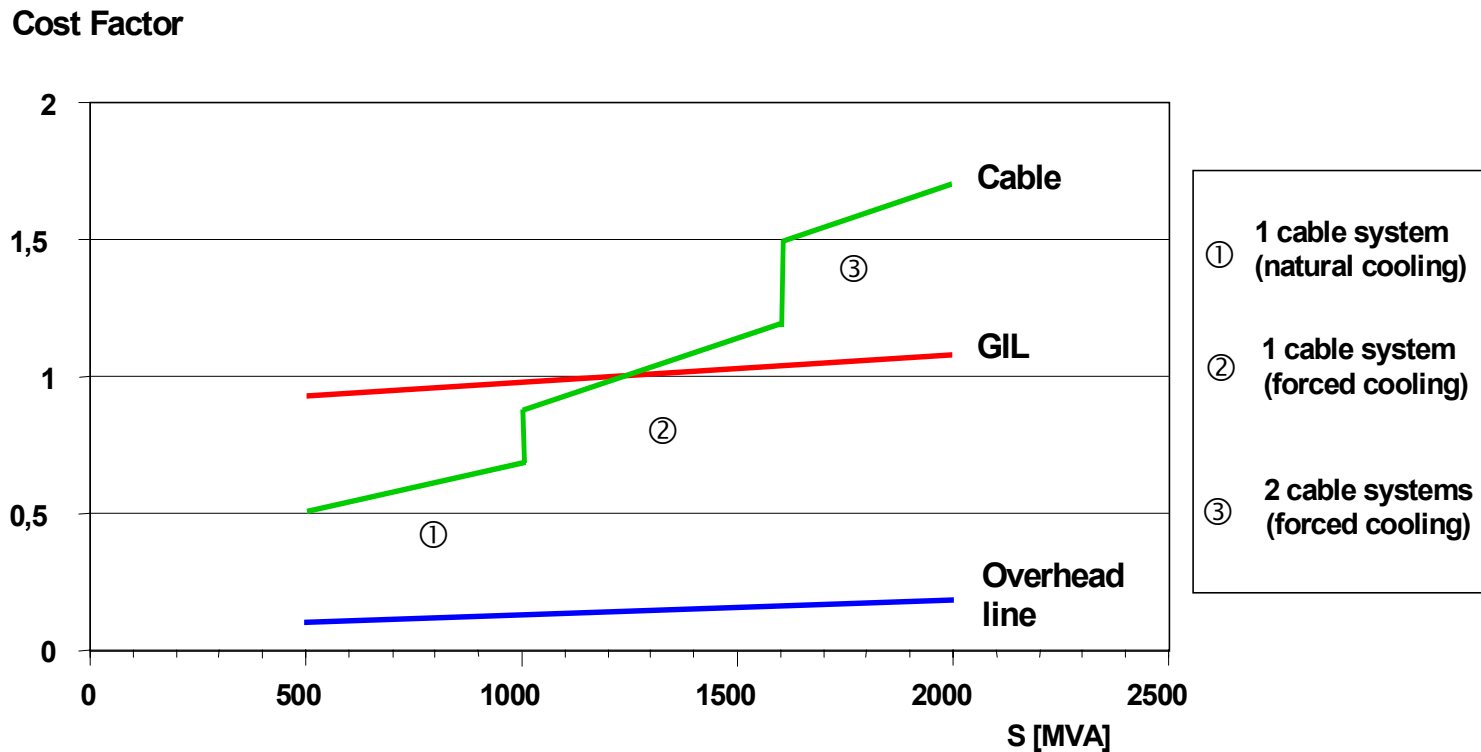




Fig. 3: Transmission Losses of Different 420 kV Systems

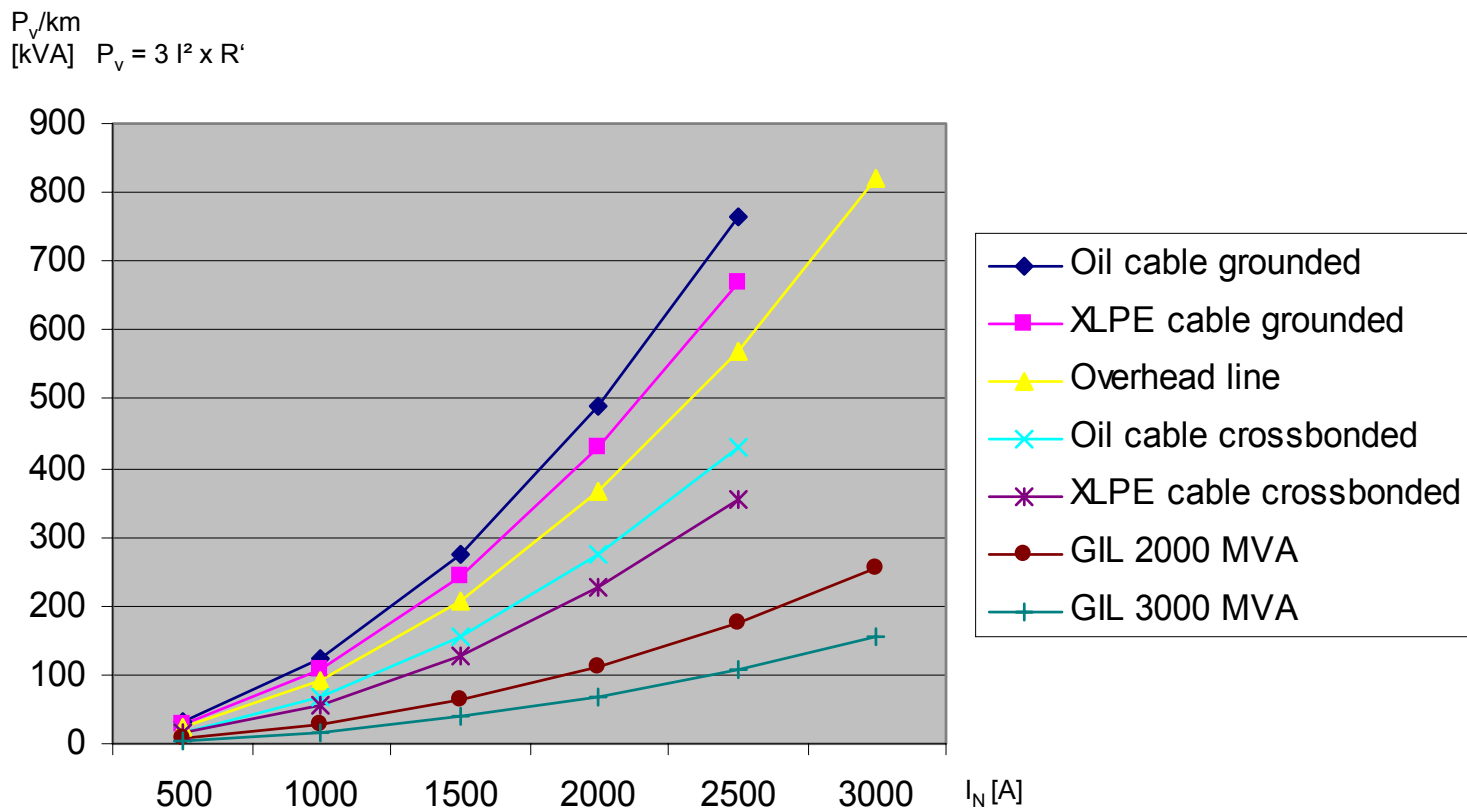


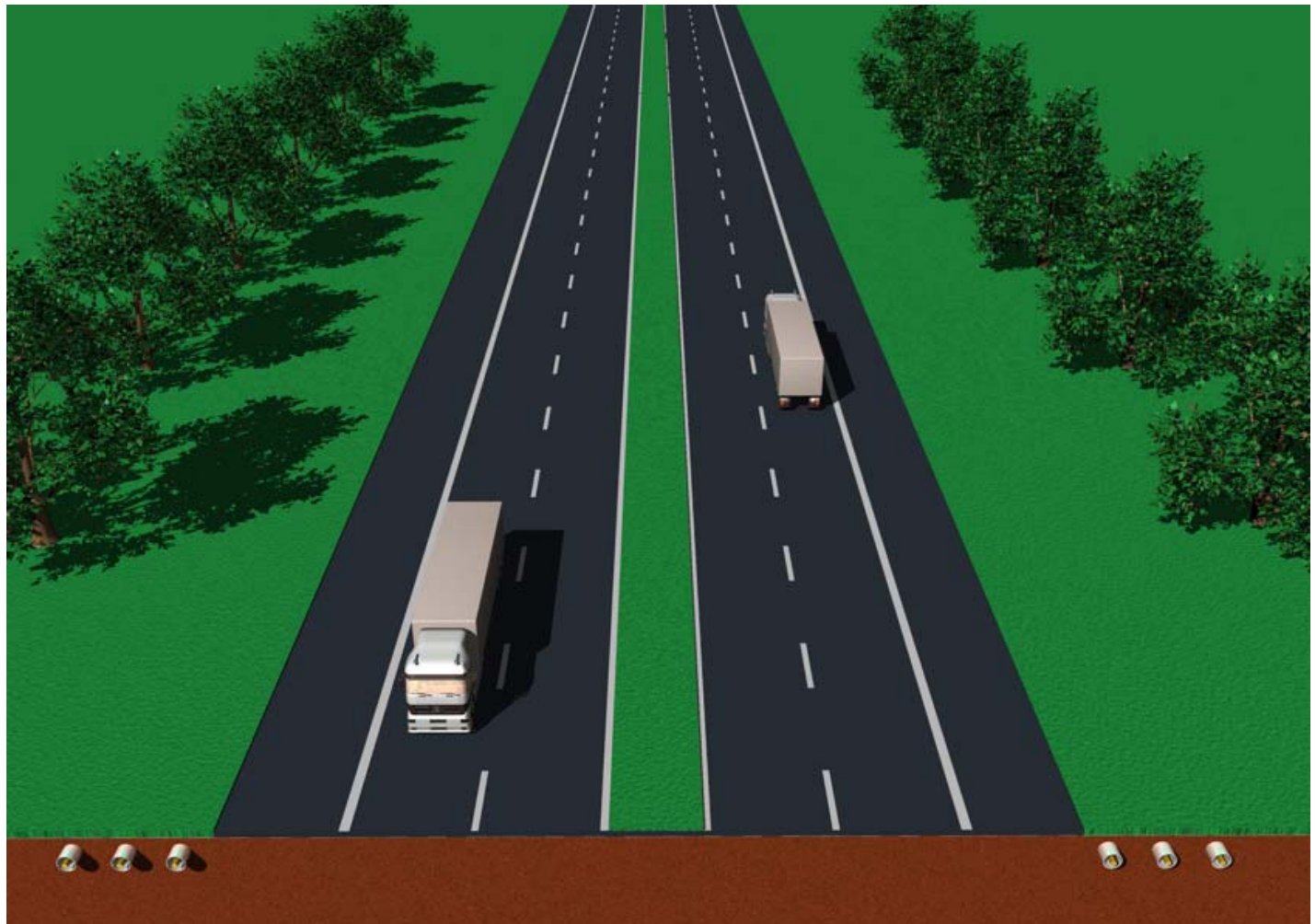


Fig. 4: Cost Differences of Transmission Losses of OHL and GIL

		OHL	GIL
Transmission power	MW	2000	2000
Losses per system-meter	W/m	820	180
Losses of 100 system-km	MW	82	18
Difference between GIL and OHL	MW	△ 64	
Difference cost of losses per year:			
(Energy price 5 Ct/kWh x 8600 h x 64 000 kW)		€ 27'520.000	
to compare: Investment GIL, 100 km		€ 300'000.000	



Freeway





Pylon

