

Overhead vs. Underground - Update

- HV and EHV Insulated Power Cables:
Evolutions and Trends

Mr. Reinhard Schroth: Chairman CIGRE SC B1

- Overhead Lines vs. Underground Systems:
Ecology and Politics

Mr. Per Christensen: Project Manager, NESÅ A/S

- Undergrounding HV and EHV

Mr. Alec Campbell: Managing Director, Gorham & Partners

Session Chairmen:

Bo Rasmusson: Ericsson Network Technologies

Aldo Bolza: Pirelli Cavi e Sistemi Energia Spa



Mr. Aldo Bolza, Session chairman, on behalf of **Mr. Bo Rasmusson**

Good afternoon, ladies and gentlemen!

The target of this session is to provide an update on the relative situation and prospects of overhead lines and underground cables in the high voltage network. The topic "O/H lines vs. U/G cables" was first discussed by ICF in the 1994 Congress in Montreal and subsequently revisited during the 1995 Congress in Barcelona. Since then, however, it has not been the object of any specific presentation in our congress. It was decided to update this important topic, which is indeed of great relevance, not only for our industry, but also for our respective networks and countries. The dramatic sequence of major blackouts, which have recently taken place in many developed countries, like the US, UK, Scandinavia and Italy, has lead David Victor, who is the head of the Stanford University Energy Program, to say that while accidents are not impossible, they become more probable, and I quote: "The neglect of transmission and generating systems loads the dices for disaster."

Strong, well interconnected and properly managed transmission networks are the key elements both for the security of supply and for true competition between generators. Significant new investments in the transmission infrastructure in many parts of the world and particular in the developed world have been delayed too long and now are definitely "a must". In this context, I recommend that you read the article suggestively entitled "Electricity, like a candle in the wind," which appeared in last week's Economist .

Against this background, the present session will attempt to examine the respective roles which high voltage overhead lines and underground cables can be expected to play in this scenario. Although the title of the session is “O/H vs. U/G: update”, I prefer to say “O/H lines and U/G cables”, because both have a role in the network as we will see from these presentations.

We have three speakers in this session.

Our first speaker is Mr. Reinhard Schroth, a well known expert in cable technology, and the current chairman of the CIGRE Study Committee on Insulated Cables, who will talk to us about technological advances which have been made in connection with high voltage cables and resulting problems and capabilities for solving them.

The second speaker is Mr. Per Christensen, he has been involved with utilities and transmission networks for over twenty years. He was the project manager for the first large 400 kV XLPE project in Denmark and in Europe. So he knows cables very well and currently he is the project manager for transmission in NESÅ, the largest Danish utility. He will talk to us about ecological and political issues which are taken into considerations by utilities, in making decisions concerning the use of overhead lines or underground cables in the network. I am personally convinced that an unprejudiced and open minded exchange of views between users and suppliers is of great importance in this context. Therefore I am most grateful to Per, for having kindly agreed to be with us for this session, in the den of lions so to speak.

Finally, our third speaker, Mr. Alec Campbell, who is the managing director of Gorham & Partners, is the author of the previously mentioned 1994 and 1995 Congress contributions. He has given a lot of thought to the questions we are debating today. He will present his view of the current situation and above all the future prospects for high voltage and underground cables in the network. I would like to thank the three distinguished speakers for being here, and I do look forward to their very interesting and stimulating contributions.

Now, Reinhard, it is time for your contribution. Thank you.