

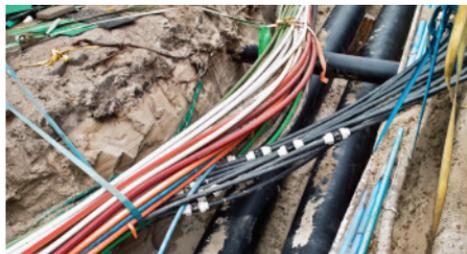
BURYING HIGH VOLTAGE POWER LINES

The Myth:

It is too expensive, and the technology is not sufficiently developed, to bury high voltage power lines.

The Facts:

● Large-scale underground high voltage power line projects constructed since 1980 involve a total of over 1,400km of cable in 17 countries (Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, Portugal, South Korea, Spain, Sweden, U.K.). Individual projects varied from 0.4km to 44km in length, and from 63kV to 500kV in force (CIGRE Working Group 2007, Europacable 2009). There are hundreds of other examples from around the world of successfully buried high voltage power lines. One of these, completed in 2000, was a 500kV cable buried in Tokyo, Japan over a 39.8km distance (Yonemoto et al. 2003). The technology has been available for several decades.



- Underground cables enhance power grid security and reliability and give improved performance, compared to overhead lines.
- Underground cables are significantly more reliable. Failures in underground cables are significantly lower than in overhead lines.
- Underground cables are significantly more efficient. Transmission losses with underground cables are significantly lower than with overhead lines, which translates to a much lower carbon footprint.
- Underground cables are affordable compared to overhead lines. There is a higher initial capital cost, but this difference is cancelled out by the much higher and costly electricity losses from overhead lines over the life of the line. When this is taken into account, plus the lengthy planning delays, property devaluation, impacts on tourism and higher maintenance costs associated with overhead lines, costs of underground and overhead lines are almost equal.



● The following information is from the Askon Consulting Group (2008):

- Underground cables are much safer than overhead lines. No electric fields are emitted from buried cables, and most importantly, the magnetic field is greatly reduced both in intensity right over the line and in distance of impact. This significantly reduces the negative health effects documented for overhead lines.
- Underground cables provide obvious environmental benefits versus overhead lines in terms of land use, visual impact, property valuation, and tourism.

● David Quest, MLA for Strathcona, tabled a Private Member's Motion in the Alberta Legislative Assembly urging the Alberta Government to investigate the feasibility of burying high voltage transmission lines. On April 6, 2009, the Motion received unanimous support in the Assembly.

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