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Mrs. Katherine Licken  
Oil Supply, Oil, Gas, Grid and Peat Corporate  
Division  
Department of Communications, Marine and  
Natural Resources  
29-31 Adelaide Road  
Dublin 2  
Ireland

Your Reference

Our Reference  
**KBu PPSMDE081295**

Name: Karsten Burges  
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Date  
4 July 2008

Dear Katherine Licken,

I understand that the department plans to publish the "Study on the Comparative Merits of Overhead Electricity Transmission Lines versus Underground Cables" next week.

I would like to take the opportunity to emphasise the key message of the executive summary again in brief:

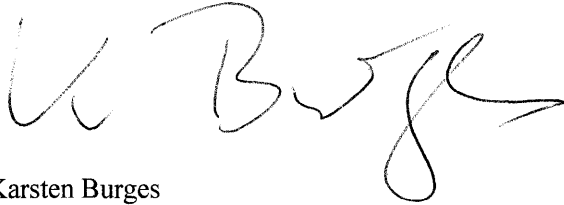
1. The study notes that internationally, diminishing public acceptance for new overhead lines has become an important driver for the assessment of underground cables as an alternative. The study also reports the continued technology development in the field of underground cables at high and extra high voltages.
2. The study states however, that the size and number of existing underground cables internationally is limited and the majority of existing projects do not represent transmission connections in conventional networks. It also notes that underground transmission cables can be expected to have forced outage rates (likelihood of unplanned system breakdowns) which are at least 10 times higher than that of overhead lines. This is a severe limitation for underground cables. Currently, underground cables do not therefore compare to overhead lines in terms of adequacy of the electricity transmission system and in terms of reliability and security of electricity supply.
3. For two specific case studies the study revealed the capital costs of underground cables would be about five times that of overhead lines and the lifecycle costs would be about three times that of overhead lines. Further the study notes that the cost estimates for underground cable proposals rely on assumptions derived from limited experience and provisional industry information and could therefore be even higher.

4. In relation to electro magnetic fields, the study notes that EirGrid designs and operates overhead lines in compliance with WHO guidelines on magnetic field exposure. In practice, under normal operating conditions in Ireland, magnetic field strengths directly under transmission lines are as low as 10 - 20% of the maximum levels recommended in the WHO guidelines.

The difference in transmission adequacy is the dominating criterion when comparing the technologies. Other aspects certainly affect the overall technology evaluation. However, any of the advantages of underground cables which were identified in the study cannot compensate for the negative impact on transmission adequacy.

I hope this brief summary is helpful when communicating the findings of the study to a broader public. I look forward to explaining these and the other findings more in detail when meeting the Joint Oireachtas Committee.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'K. Burges', with a stylized flourish at the end.

Karsten Burges  
Manager Power Systems and Markets  
Ecofys Germany GmbH (Berlin)