



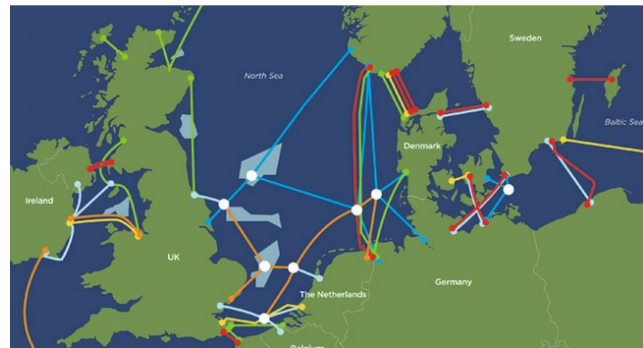
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## Seminar: ‘Are we set to Embrace a DC Transmission Grid Future?’

Venue: Department of Electrical and Computer Engineering,  
Information Technology Building (ITB), Room ITB/137, 29<sup>th</sup> July 2013, 18:00.

In the wake of globalisation, energy use and production is undergoing rapid changes. This necessitates new transmission topologies and infrastructure to allow new generation resources to be connected to existing and new load centres. For long distance electrical power interconnections, this ultimately means high voltage DC (HVDC) transmission, a research and development sector experiencing rapid advances in technology.

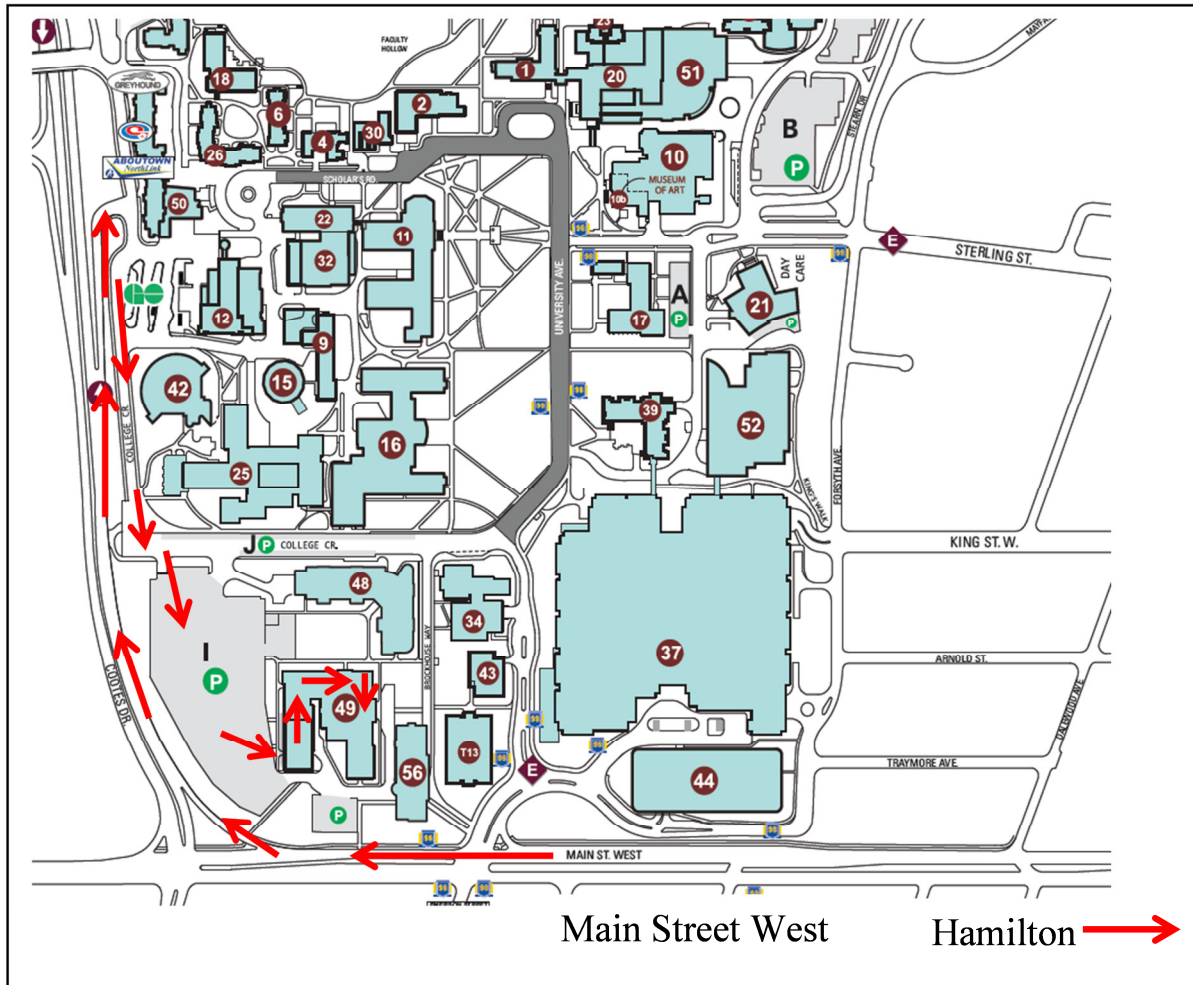
Developments in power electronics have meant that voltage-source converter HVDC (VSC-HVDC) schemes that are based on IGBTs switching technology are starting to be cost competitive with older, more well-established current-source HVDC schemes that are generally based on thyristors. VSC-HVDC has a number of advantages, particularly for DC grids and offshore interconnection. The technology is however new, poorly understood, and still has a number of challenges to overcome.



The lecture will review recent developments in HVDC transmission, specifically voltage-source converter driven HVDC (VSC-HVDC) schemes; it will review plans and installations globally, offer a review of the VSC-HVDC technology and converter schemes; and highlight research and development challenges and bottlenecks to be overcome.

Mike Barnes, SMIEEE, MIET, C. Eng., is Professor of Power Electronic Systems at the University of Manchester. His main research focus is the integration of offshore wind through HVDC Grids. He has managed projects on Wind-farm integration with the network, VSC-HVDC and FACTS modelling for National Grid, Siemens T&D, Alstom Grid and TNEI. His recent work for National Grid has been used in the VLPGO (Very Large Power Grid Operators) position paper on HVDC, and of sections of reports by Cigré working group B4.57 on HVDC Grid modelling and B4.60 HVDC Grid reliability. Mike has published over 100 papers in the area of power electronics and power electronics enabled systems. Mike is a Senior Member of the IEEE, member of the IET and Chartered Engineer.





Room ITB/137; Monday, July 29 at 18:00.

Directions from Hamilton, Ontario via Main Street West.

Please advise Prof. Nigel Schofield via email by 24<sup>th</sup> July if you are likely to attend so that he can manage refreshments:

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