

Title **The costs and impacts of variable renewables**

Speaker **Dr. Robert Gross**

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Date & Time **Thursday, March 1, 2018 4:00 p.m.**

Place **I²CNER Hall, Ito campus, Kyushu University**

Abstract

In 2006, Dr Gross led the first major international systematic review of the evidence on the costs and impacts of increasing the amount of ‘intermittent’ generation such as wind and solar power connected to electricity networks. The work was undertaken by the UK Energy Research Centre and made a major contribution to understanding and policy development. Since then, targets for renewable generation have increased, and a number of significant new studies have been carried out into the likely effects of a much higher proportion of renewable electricity in the UK and globally. The 2017 report provides an update to the original 2006 UKERC report. The primary research question is: What new evidence has come to light since UKERC reviewed the costs and impacts of intermittency in 2006 and what does the available evidence suggest about the costs and impacts of very high penetrations (20% and above) of intermittent generation?

The report finds that the additional costs of adding variable renewable generation to an electricity system can vary quite dramatically, with higher costs normally the result of inflexible or sub-optimal systems, and that electricity systems and markets must adapt and be re-optimised to incorporate large proportions of variable renewable generation. Furthermore, a ‘whole system’ analytical approach - rather than seeking to quantify individual impacts - is essential to determine the optimal mix of technologies in substantially transformed systems.

About the Speaker

Dr. Robert Gross is Reader in Energy Policy and Technology and Director of the Centre for Energy Policy and Technology (ICEPT) at Imperial College London. He is Policy Director of Imperial’s Energy Futures Lab. He is a Co-Director of the UK Energy Research Centre (UKERC). Dr Gross has published extensively on energy policy and technology. He has led systematic reviews of energy topics for UKERC since 2004 and has made a substantive contribution to UK energy policy development, acting as advisor to Select Committees, preparing reports and chairing committees for UK Govt, and as a consultant. He was seconded to the Cabinet Office in the early 2000s and contributed to the Blair Govt. Energy Review. He also has extensive teaching experience at MSc and PhD level. He has been invited speaker at a wide range of conferences and forums in the UK and overseas. He makes regular contributions to the popular debate surrounding energy, in the mainstream broadsheet press, online and in TV and radio appearances. In 2014 Gross was Chair of the Council of the British Institute of Energy Economics.

Host: Prof. Petros Sofronis

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