

# WISE

WATERLOO INSTITUTE  
FOR SUSTAINABLE ENERGY



## LECTURE SERIES

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BUILDINGS | CARBON CAPTURE AND STORAGE | FUEL CELLS | NUCLEAR | POLICY | PLANNING  
RENEWABLES | SMART GRID | STORAGE | SUSTAINABLE MOBILITY | SUSTAINABILITY ANALYSES

PRESENTED BY THE WATERLOO INSTITUTE  
FOR SUSTAINABLE ENERGY

**Wednesday, October 2, 2013**

**10:00 – 11:00 am**

**Davis Centre – DC 1302**

## ENERGY PERSPECTIVES FOR GERMANY AND EUROPE: A RESEARCHER'S VIEW

RECEPTION AND REFRESHMENTS FOLLOW THE LECTURE

**Dr.-Ing. Joachim U. Knebel**, Chief Science Officer, Karlsruhe  
Institute of Technology (KIT), Germany

In Germany, researchers, politicians, businesses, and society are facing the challenge of the century: implementing the 'Energiewende', or energy turnaround, that has been adopted by the federal government. By 2050, Germany's primary energy consumption is to be half of what it was in 2008. Renewable energies are to reach a share of at least 60 per cent of the country's gross energy consumption and they are to cover 80 per cent of electricity consumption. Greenhouse gas emissions are to decrease by 80 per cent from 1990 levels. If Germany is to realise these goals, it has to restructure its energy system in the long term. This requires new technologies for using primary energies and for converting, storing, and distributing them.

In line with the German Energy Research Programme, entitled 'Research for an environmentally sound, reliable, and affordable energy supply', KIT performs national provident research in six fields: Energy Efficiency, Materials and Resources - for restructuring energy supplies; Renewable Energies - for future-oriented energy supplies; Storage Systems and Cross-linked Infrastructures - for the renewable energy age; Technology, Innovation and Society - transformation processes and analyses of the energy system; Nuclear Waste Management and Safety; and Nuclear Fusion - as a long-term option.

The talk discusses the challenges of the German Energiewende both in a national and a European context, gives some successful examples – from the fields described above – on how research results help to realise a new energy supply system. Finally, requirements and next steps are formulated which take into account the complex system context and the political and societal issues involved.

### Biography



Joachim Knebel is the Chief Science Officer (CSO) at KIT. He is responsible for research programs that currently include: Storage and Cross-linked Infrastructures, Fusion Research and Nuclear Safety Research.

Within the German Helmholtz Association of National Research Centres, he is Spokesperson for the Nuclear Safety Research Program and for the Cross-Program Activity on Electromobility. Joachim has a Ph.D. in mechanical engineering and has authored or co-authored 100+ scientific publications and has given over 80 invited lectures at conferences, public hearings, press events, and specialist meetings world-wide.

In 2011, he was awarded the European Science Culture Award of the European Foundation for Culture PRO EUROPA for merits in Partitioning & Transmutation Research.

RECEPTION AND  
REFRESHMENTS

**11:00 AM**

**DC 1301**