

Extended outline - Visiting PhD fellow

SPRU 2013 - University of Sussex

By appointment with Dr Adrian Smith and Dr Steven Sorrell will the following extended outline frame the expected research aspect of a visit by Tobias Ruby to SPRU in the spring, 2013.

Introduction

The main focus of my PhD project is to investigate the innovation dynamics of energy efficient technologies with the aim of creating new knowledge for policy making and industrial development. In my research group *Industrial dynamics and Strategy* (Previously called *Innovation systems and Foresight*) at DTU Management Engineering we have extensive experience with national research strategy on energy technology development.

My PhD is a part of the Energy Innovation Systems research alliance (www.eis-all.dk) with academic partners in Denmark (DTU, CBS, Aalborg and Aarhus), Germany (ZEW), Switzerland (EAWAG), The Netherlands (Utrecht) and Norway (NIFU).

As I have been informed by Dr Adrian Smith will SPRU in the future establish a Research Centre on Innovation and Energy Demand and I believe it would be possibly to contribute to these new activities.

Contribution

My main contribution during a research visit would be knowledge and experience with energy efficiency innovation dynamics. Substantial research has been done on the energy production technologies (renewable and low-carbon solutions) and its diffusion but we know from the literature that energy efficiency and energy demand are dealing with a much more diffuse set of technologies, industrial sectors and policies. Additionally there varying rebound-effects and market barriers towards the adoption and diffusion of energy efficient technologies - all together influencing the innovation dynamics.

I will also be able to share knowledge and experience from Danish and Scandinavian energy policy efforts. Additionally to Scandinavian policy I also have a basic knowledge of European energy policy, energy efficiency indicators and available data within the field.

Furthermore, I am using an historical perspective on industry transition towards energy efficiency in terms of both production but also the supply of energy efficient solutions (typically through policy and market transformation). In Denmark we generally see more and more innovative company behaviour when the companies are increase their efforts in energy efficiency (in terms of the number of new products introduced).

For more information please contact;

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Gain

A visit to SPRU will undoubtedly contribute tremendously to my theoretical, conceptual and methodological understanding of innovation and industrial dynamics in general. It would be a great opportunity to cooperate and discuss with SPRU's staff of world leading researchers.

Furthermore, will contextual knowledge and data about the UK and its efforts in energy efficiency and demand be a valuable addition to my research.

Output

The output of the research visit could be through the following.

- Feedback on working papers and on-going research activities
- Contributions to papers on innovation and energy demand
- Possibly a small UK case study on industrial change and energy efficiency

These are purely possible outputs and will be subject to change.

A PhD-candidate CV is attached.

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PhD-candidate CV

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Keywords: *Innovation studies, sustainable development, energy efficiency, qualitative and quantitative research methodology*

PhD project – Innovation from energy efficiency efforts

Started 1st of October 2011 – finish 1st of September 2014

Investigating the dynamics of energy technology innovation with special attention to the role of policy in inducing innovation and knowledge development.

The project is a part of the Energy Innovation Systems research alliance, EIS. <http://www.eis-all.dk/>

Noticeable PhD- activities so far

Participation in DRUID Academy Conference 2012 19th-21st of January – University of Cambridge.

Preliminary paper accepted: *Policy driven innovation – the case of energy saving obligations for energy companies in Denmark*

Completed PhD courses

Innovation and entrepreneurship theory – DOME Aalborg University, Denmark.

Energy Innovation Systems – Aalborg, Denmark.

Innovation and learning in Energy policy - NTNU, Norway. (December 2012)

Introduction to Social Network Analysis - DOME Aarhus University, Denmark.

Research methodology and design – DTU, Denmark.

Introduction to SPSS – Copenhagen Business School, Denmark.

How to get your research into journals – Copenhagen Business School, Denmark.

Teaching

Masters course at DTU –Title: *Knowledge and Innovation in Networks 2012*

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Educational background

Master of Science in Engineering, BSc and MSc in *Design and Innovation* from DTU (2006-2011)

The Design and Innovation education at DTU focuses on creating professionals for company research and development activities with specific capabilities in innovation and R&D management.

Master's thesis: *Knowledge in Global R&D*.

Investigating knowledge in Danfoss R&D, with special attention to Danish and Chinese engineers (www.danfoss.com).

Previous student projects with; Oticon, Nokia, Coloplast among others.

Professional experience (Only during studying)

Student project (paid) at DTU Risø - 2010 – Research in future composite materials for wind mills.

IT-support at Kontrabande – 2007 to 2010 – Management of IT at a small consulting firm.

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