



TEACHING ENERGY ECONOMICS WORKSHOP

Workshop Summary Report

31st May 2006, Lady Margaret Hall, Oxford

Report by:

Heather Witham, University of Bristol

Event organised and sponsored by:



THE UK ENERGY RESEARCH CENTRE MEETING PLACE

The UK Energy Research Centre's mission is to be the UK's pre-eminent centre of research, and source of authoritative information and leadership, on sustainable energy systems. UKERC undertakes world-class research addressing whole-systems aspects of energy supply and use, while developing and maintaining the means to enable cohesive UK research in energy.

A key supporting function of UKERC is the Meeting Place, based in Oxford, which aims to bring together members of the UK energy community and overseas experts from different disciplines, to learn, identify problems, develop solutions and further the energy debate.

THE HIGHER EDUCATION ACADEMY ECONOMICS NETWORK

The Economics Network of the Higher Education Academy is one of 24 subject networks that promote high quality learning and teaching through the development and transfer of good practices. The Higher Education Academy brings together three initiatives, the Learning and Teaching Support Network (LTSN), the Institute for Learning and Teaching in Higher Education (ILTHE) and the TQEF National Co-ordination Team (NCT).

The Economics Network of the Higher Education Academy aims to enhance the quality of learning and teaching throughout the higher education economics community.

CORE ORGANISING TEAM

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Seminar Format & Objectives

This was a participatory workshop to share ideas for the innovative use of current energy events in the teaching of energy and transport economics. There were no formal speakers, as participants were given the space, time and 'infrastructure' (i.e. activities and set-up) for networking and sharing. Two weeks before the event, registered participants were asked to answer some questions about their teaching interests, strengths and concerns e.g. approaches to teaching, difficult topics and teaching resources. The responses were used to shape the agenda for the day.

The impetus for this unusual format was that participants of more traditional seminars/workshops/conferences lament the lack of time for networking and sharing. This workshop aimed to remedy that by making those aspects the focus.

Summary

Prior to the workshop, participants were asked to respond to the following questions:

1. What economics courses do you teach now or have you taught in the past?
2. Please list any economics courses you have not taught before but are planning to teach in the future.
3. Which areas of teaching energy/transport economics give you the most worry/concern and would you most like to discuss with other lecturers? You may also include areas/issues that you are very interested in learning more about.
4. Name one of the best *or* most innovative methods of using current events/news stories in the teaching of energy/transport economics that you use or are *interested* in using.
5. Please list your past and present research interests.

In response, registrants listed the following as their areas of concern:

- Representing external costs in the transport appraisal – quantitative and qualitative approaches.
- Biases, objectivity, avoiding dealing with complex/analytical issues.
- Criticism of Cost Benefit Analyses and the way they are used.
- Given the heterogeneous student body:
 - presenting the topics in a lucid and comprehensible manner,
 - maintaining the standard for MSc level courses,
 - satisfying needs of various groups of students, and
 - ensuring certain amount and level of continuity in the learning is maintained over time.
- Lack of good text books and consequently there is a heavy reliance on journal papers and internet resources.
- Students leave the system with uneven and superficial knowledge.
- The eight week term system in the UK gives relatively little time to cover a whole range of issues in a module.
- Holes in my underlying knowledge of economics.
- At (conversion) Master's level, most students have no prior knowledge of economics, hence the balance between including general 'economics' and 'transport economics' material can be difficult. Put another way, finding the balance between general theory and application of that theory to transport issues can be difficult, particularly given teaching time constraints.
- Institutions & public policy in natural resource rich countries.
- Building public administrative & financial capacity in natural resource rich developing countries.
- Energy fiscal regimes.
- Synergies and conflicts between non-renewable natural resource exploitation and

- other economic sectors.
- Renewable energy and potential for developing countries.
- Quantitative analysis of energy data.
- The gulf between the economic methods used on the electricity supply side, and those used for demand side management.
- The notion of 'discounting the future' and its relevance to things such as nuclear waste and climate change.
- The implications of 'peak oil', the free market, competition and risk.
- How to teach energy forecasting, economic valuation and consumption issues.
- Getting engineers and scientist to accept economic and biological ideas of dynamic systems with feedbacks, rather than static systems.
- Concerned that what I view as relatively straightforward economics is perceived as difficult by most of the Masters students. So techniques to enthuse and engage students would be welcome.
- A discussion on groundwork would also be worthwhile. Most of our intake come from a science/engineering/environmental background and may not have considered much economic theory or practice before.
- How do we incorporate energy in micro courses? Just as any other cost? Or should it receive special attention in today's climate?
- Transport intensity and energy intensity: in particular, obtaining consistent and up to date data.
- Lack of local university networks.
- I want to make the economics of energy interesting to environmental science students and, if possible, to design a practical that will engage them.

Unusually, most of the participants were not economists and were seeking guidance in teaching non-economics specialists. The varied background in transport, energy, renewables, and microeconomics proved a challenge for structuring the day. But in the end, the highlight was the networking and, in this case particularly, the sharing of resources for supporting students without economics backgrounds.

Innovative teaching methods shared during the day included:

- Mock-public hearings, used in order to simulate transport appraisal process, where some students represent stakeholder / lobby groups, which have different interests, approaches and values.
- Using either a group exercise or a simulation or a hands-on session in one class to highlight certain aspects.
- Analytical narratives.
- Teaching the economics of tidal power using the 1988 study for the Severn Barrage. Teaching the economics of nuclear power using the government's 1994 Nuclear Review and a critique of costings made by Nuclear Electric at the time. Both use spreadsheet exercises to illustrate the use of discounted cash flow for these.
- With a strong policy content to a course, news items (from all media) and policy documents are used to stimulate discussion of the policy and economic impact.
- Interested in using meeting the climate change targets.

One attendee wrote:

"Many thanks for an enjoyable and informative workshop. As a non-economist teaching energy economics I was enthused by the discussions within the groups and grateful for the resource information, none of which I had previously seen."

The Economics Network is now aware of this need from non-economists and plans to address it via their website (<http://www.economicsnetwork.ac.uk/>) and, possibly, future workshops. We are also in the process of accepting bids for projects aimed at the audience attending the workshop.