



Professor David Newbery, CBE, FBA

Educated: Read mathematics at Trinity College, Cambridge 1961; Finals (Part II) 1963, (formal graduation B.A. 1964). Finals (Part II) Economics 1965. Ph.D (Cambridge) 1976. ScD (Cambridge) 2001

Current employment: Research Director of the Cambridge Electricity Policy Research Group, University of Cambridge, 2001- . Emeritus Professor of Applied Economics at the University of Cambridge, 2010, Research Fellow, Control and Power Research Group at Imperial College London, 2010 - ; Deputy Independent Member of the Single Electricity Market Committee of the island of Ireland 2013- ; Panel member Ofgem's

Network Innovation Funds, 2011- ; Member, Panel of Technical Experts for UK Department of Energy and Climate Change on Electricity Market Reform 2013- .

Previous career:

ODI Nuffield Fellowship as an economist in the Treasury of the Tanzanian Government, 1965-66; elected Fellow and Director of Studies, Churchill College Cambridge 1966;

Tenure track 1966 (tenure 1974). Reader, 1986. Director, Department of Applied Economics, 1988-2003. Prof. App. Econ. 1988-2010, all at Fac. of Economics, University of Cambridge.

Div. Chief, Public Econ. Division of Research Department World Bank, Washington, D.C. 1981- 3

Visiting Scholar, IMF Fiscal Affairs July-Aug 1987

Visiting academic positions: Yale University 1969; Stanford University 1976-7; Princeton, 1985. Ford Professor UC Berkeley, 1987-1988; Visiting Prof, U Southern Denmark, 2010-11

Selected academic affiliations: Fellow *Centre for Economic Policy Research*, 1984 - ; Sen. Res. Fell, *Inst. for Policy Reform*, Washington DC, 1990-96

Previous membership of public bodies: Environmental Economics Academic Panel, UK

Department of the Environment, Food and Rural Affairs 1992-2012; Monopolies and Mergers Commission (subsequently Competition Commission) 1996- 2002; Chair Dutch Electricity Market Surveillance Committee, 2001- 2005; Chair, Lead Expert Group, UK Government Foresight *Land Use Futures* 2008- 2010. Specialist advisor to House of Commons Inquiry into British Energy Policy and the Market for Coal, 1992- 1993; Expert witness for Office of Fair Trading, 2000-1

Advisor to Regulatory Agencies: Ofgas (subsequently Ofgem); Office of Rail Regulation; Ofwat; PostComm. Expert Advisor for first electricity price control in the Netherlands, 1997

Consulting: Vice Chairman, Cambridge Economic Policy Associates (2001-) (consultancy); acted as Expert Advisor on: *Market power and liquidity in the Single Electricity Market* for CER/NIAUR; a study for DEFRA determining the direct and indirect costs and benefits to the Russian Federation from ratifying the Kyoto Protocol; a study for the Dutch electricity regulator NMa on the economics of BritNed - new electricity interconnector between the UK and the Netherlands; support to the Irish Commission for Energy Regulation for the price control review of the gas transmission and distribution networks for 2007-2012; an international comparison of the approaches regulators adopt to determining the appropriate cost of capital allowance, carried out for the Dutch electricity regulator;

Non-exec. Director, ME & P, (transport and land use planning) 1994-2001.

CET: assisted preparing the privatisation of Poland's 33 electricity distribution companies (1999).

World Bank missions: Member of teams advising governments of Romania (1995, 2000), Hungary (1987, 1998), the Czech Republic (1998) and Bulgaria (1999) on regulatory reforms and restructuring of the electricity, gas and oil sectors to meet the EU Directives. Research team visits to Tunisia (1987), Ghana (1989), Bangladesh (2001), Uganda and Kenya (2004). Consultant to National Treasury of South Africa on reform of the electricity industry 2007-8

Career evolution and choices

When I graduated I was offered a teaching position in my college at Cambridge, but I had already accepted my first job was as a Overseas Development Institute Nuffield Fellow as an economist in the Treasury of Tanzania – useful experience applying economics to a range of policy issues, mainly in agriculture. While in Tanzania I was appointed to a tenure track lectureship – equivalent to Ass. Prof. – in the Faculty of Economics, where I have remained more or less continuously. Clearly I could have followed the career path of many such ODI fellows – my predecessor became a distinguished Chief Economist in Botswana before moving to the World Bank, but the call from Cambridge was hard to resist, so I became an academic by accident, and was never properly educated in a formal PhD programme, instead taking advantage of the option of submitting published work for the PhD.

I have always been an applied welfare economist which lends itself to a wide range of policy applications but have changed focus periodically. I worked with Joe Stiglitz in Stanford on energy and risk in the wake of the 1976 oil shocks, with Eric Maskin on inter-temporal time consistency problems in resource economics, and again with Joe Stiglitz on the economics of commodity market price stabilization for USAID, resulting in a major book on risk. That led the World Bank Research Department to invite me to join the Public Economics division, which I then headed. Mostly I worked on the economics of transport investment and pricing, which resulted in a major paper in *Econometrica* that won the Frisch prize – a good example of how policy relevant questions can stimulate theoretically interesting economics research. I joined an energy mission to Papua New Guinea to see how they could cope with the oil price rise, and what kinds of renewable energy might be viable.

Clearly I could have remained at the World Bank but I chose to return to Cambridge, while remaining in close and productive contact with the Bank. I have been invited to write reports and join missions for the Bank over the years – on cost benefit analysis, energy sector reform, either visiting countries to assess their reform efforts or as missions giving advice and/or lectures on lessons learned. As an IMF visiting scholar I worked on transport taxation.

One of the key events of the 20th century was the transformation of central Europe from state socialism to the market economy, and I was lucky to be involved even before the dramatic events of 1989. I joined a World Bank mission to Hungary in 1987 to look at public finances and met the groups pressing for reform. When the democratic reform movement erupted in Poland in 1989 the CEPR, with funding from the UK Foreign Office, assembled a group of economists to think about the theory and historical evidence on transforming socialist into market economies. That was an intensely exciting period, interacting with equally enthusiastic economists from the west and Central Europe. We set up a research programme with economists in the Budapest Karl Marx University (now Corvinus University) to use panel household

budget data to track the reforms and their impact on individuals, particularly looking at tax reform. This experience of transforming and privatisation overlapped with a comparably transformative political movement in Britain to privatize state owned enterprises – BT, British Gas, and then the electricity industry. I was on sabbatical in Berkeley in 1987-8 and had already started thinking through electricity reform with Rich Gilbert, head of the University of California Energy Group. Together we edited one of the first comparative international studies of electricity reform and regulation.

I nearly decided to stay on at UC Berkeley, but while there I was appointed Director of the Department of Applied Economics in Cambridge. We applied for grants to study the privatisations of electricity and telecoms, and continued with successive grants until we built it up to today's Energy Policy Research Group.

I had thought that electricity restructuring was an interesting episode like the transitions in central Europe (and China, where I was invited to present the experiences of a gradual transition like Hungary to contrast with Jeff Sachs selling the shock therapy of the Polish model), but it has never ceased to throw up interesting problems to address. Our research group had a series of Research Council funded projects in the 1990s and then trebled in size with funding from the Cambridge MIT Institute, which supported a partnership with MIT's CEEPR, a relationship that continues after the end of funding with joint annual international conferences that we take turns in organizing. Nearly 25 years after the first project we are still finding challenging issues to address – climate change mitigation, market integration, incentive regulation, innovation, transmission pricing, gas market interactions, and financing low carbon generation. I now also work on electric vehicles, and their economics and grid integration, as well as sitting as an independent member of the Single Electricity Market Committee of the island of Ireland since 2013, which is currently addressing market (re)design to meet the requirements of the EU Target Electricity Model.

Reflections on career

I consider myself incredibly lucky in that I had excellent colleagues to provide the graduate education that I missed by moving straight from an undergraduate degree via my ODI fellowship in Tanzania to a lectureship in the economics faculty. That was when Frank Hahn had revived the faculty, which contained exciting young economists like Jim Mirrlees, Partha Dasgupta and Geoff Heal. He invited brilliant visiting economists to my college and the faculty (Diamond, Arrow, Debreu, Maskin, Stiglitz, Nordhaus). I started working with Joe Stiglitz in Yale in 1969, and shared an office with Tony Atkinson from 1966. My advice would therefore be to make sure you do your post-graduate work at a really good department which has a lively seminar program and a reputation for close staff-student and student-student interaction. I consider the EPRG model of weekly seminars and three conferences every year an

excellent model, where we expect our PhD students to present their work both internally and at international conferences, such as the IAEE.

I also consider myself lucky in becoming an academic in a period that was much more curiosity driven, when publishing was not such a nightmare (although it has never been a quick or painless process in good journals), and when applied economics and working in specialised fields like transport and energy economics was considered more valued than today, with its emphasis on top-10 journals. I was also lucky in interacting with policy-makers at home and abroad addressing interesting questions over my entire professional career, on the basis of published work or reputation, sometimes via economic consultancies.

I regret (but only slightly) not having had a better grounding in econometrics, although I am grateful for Brian Reddaway's insistence that all undergraduate economists should be familiar with the Government's statistical source books and be able to extract and comment quantitatively on the issues of the day – invaluable on grappling with the macro issues of transition in central Europe.

Skills needed for energy economics

You need curiosity and a desire to understand how companies/policies/markets work and might work, built on a thorough grounding in economics, particularly micro-economics and industrial organization and public economics (tax theory, cost benefit analysis, externalities and public goods, accounting prices, etc.). I count myself lucky that I had an intense science education at school and more physics as part of my mathematics degree, so I was familiar with Ohm's and Kirchoff's laws, Maxwell's equations, and could therefore discuss reasonably intelligently with electrical engineers. I think it takes pretty intense economics study to feel comfortable addressing new problems with a broad portfolio of existing skills as so much is a question of informed common sense and a familiarity with the kinds of questions and theories that economists gradually acquire.

I find that PhD students who have spent a year in a consulting firm learning how to write reports to tight deadlines are often much better organised to undertake less directed research, and that is a considerable asset. I think it is helpful to be acquainted with the rudiments of company finance, balance sheets, and certainly to be competent at building simple spreadsheet models. Feeling undaunted at simple programming and model building is an asset but not at the expense of being able to do quick back-of-the-envelope assessments as sense checks. It helps to have a catholic approach to economics – politics, behaviour and attitudes are often highly relevant – and to be able to draw on international lessons. Fortunately the laws of physics apply everywhere, and that helps, but institutions vary in important ways across countries, and history usually matters.