

Energy Library update November 2005

The following is a list of books, journals and journal articles recently received by the Energy Library, as well as free web resources of interest to those working in the energy sector.

These are only a few of our new resources - don't forget to check out other new resources in the library catalogue by clicking on the "quick clicks" link and then "new items". If you can't log on to the catalogue, or have lost your password email us - we're always happy to help.

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Featured Energy Library Journal

Oil and Gas Journal

Oil & Gas Journal, first published in 1902, is the world's most widely read petroleum industry publication. Each week the Journal delivers the latest international petroleum news; analysis of issues and events; practical technology for design, operation and maintenance; and important statistics on international markets and activity. The Oil & Gas Journal is designed to meet the needs of engineers, managers and executives throughout the petroleum industry.

Oil and Gas Journal is available on circulation (3 day loan per person).

Books

Guide to Microturbines, Bernard Kolanowski, Fairmont Press, 2004.

This book will bring you up to speed on all aspects of gas microturbines, covering the full scope of technologies now available, as well as where and how they are being applied, and how their increased use will impact the electric power industry in the years ahead. The first section examines how microturbines work, their use for power production, fuel variations, environmental advantages, and how they are connected with utility systems. The second section focuses on applications and case histories, examining use of microturbines for distributed generation, cogeneration, waste fuels, peak saving, and cooling applications.

Energy, Environment and Development, Jose Goldemberg, Earthscan, 1999

The energy-environment connection has been the subject of many studies over the years, as has the interrelation between energy and development. This book looks at the links between all three. The book begins with an overview of the concepts of energy, and what economists generally mean by 'development'. It then gives a factual description of current energy-related problems of environmental degradation, looking at their causes and technical solutions and the present energy trends. Finally, it discusses both general and specific policies to promote sustainable development in the area of energy.

Energy, the State, and the Market: British Energy Policy since 1979, Dieter Helm, Oxford University Press, 2003

This book is a study of the new market approach to energy policy in Britain since 1979. It describes the miners' strike, the privatisations of the gas, electricity, nuclear generation, and coal industries, and looks at events such as the dash for gas, regulatory failures in setting monopoly prices, and the takeovers and the consolidations of the late 1990s. Helm sets out the achievements of the new market philosophy, but also analyses why it has ultimately failed to turn energy industries into normal commodity businesses.

The Effectiveness of Policy Instruments for Energy-Efficiency Improvement in Firms: The Dutch Experience, K. Blok, H. L.F. de Groot, E. E.M. Luiten, M. G. Rietbergen. Kluwer, 2004.

How can governments implement effective policies to stimulate energy-efficiency improvement? The Netherlands and some neighbouring countries in Europe have implemented a variety of policy instruments since 1990. These include investment subsidies, voluntary agreements on energy-efficiency, direct regulation and taxes. How effective are these measures? This book presents improved theoretical insight in the investment behaviour of firms, and moreover it provides a wealth of empirical results on the effectiveness of policy instruments. It discusses issues such as free-rider effects of subsidies, the credibility of voluntary agreements, the art of regulation and the fate of R&D money. The book is written by a multidisciplinary team with backgrounds in economics, environmental sciences and innovation theory, led by an acknowledged expert on technology and policy.

Hydropower development series. Norwegian Institute of Technology, 2003

We have recently received four new volumes in this series. Each volume deals with a separate topic in hydropower, and covers current thinking and practice within its field. The Energy Library also has other volumes in this series.

Vol. 12: **Mechanical equipment**

Vol. 14: **Underground powerhouses and high pressure tunnels**

Vol. 15: **Construction management**

Vol. 17: **Maintenance strategies**

Projected Costs of Generating Electricity -- 2005 Update, International Energy Agency and Nuclear Energy Agency, 2005.

The joint IEA/NEA study provides generation cost estimates for over a hundred power plants that use a variety of fuels and technologies. These include coal-fired, gas-fired, nuclear, hydro, solar and wind plants. Cost estimates are also given for combined heat and power plants that use coal, gas and combustible renewables.

Data and information for this study were provided by experts from 19 OECD member countries and 3 non-member countries. The power plants examined in the study use technologies available today. The study shows that the competitiveness of alternative generation sources and technologies ultimately depends on many parameters: there is no clear-cut "winner". Major issues related to generation costs addressed in the report include: descriptions of state-of-the-art generation technologies; the methodologies for incorporating risk in cost assessments; the impact of carbon emission trading; and how to integrate wind power into the electricity grid. [Table of Contents](#) and [Executive Summary](#) can be accessed via the web.

Reducing Greenhouse Gas Emissions - The Potential of Coal. Prepared by the IEA Coal Industry Advisory Board, 2005.

This report examines the potential for achieving greenhouse gas reductions in coal-based power generation and the types of technologies and policies required to realise that potential. It presents both a global perspective, and regional viewpoints based on observations and experiences in key coal-producing and consuming countries.

Journal Articles and reports

A World Wide Review of the Commercial Production of Biodiesel: A Technological, Economic and Ecological Investigation Based On Case Studies, *Stephan Friedrich*, Institut für Technologie und nachhaltiges Produktmanagement der Wirtschaftsuniversität, 2004

(To receive a copy of this article email library@energylibrary.co.nz)

Green Power Marketing in the United States: A Status Report. Lori Bird and Blair Swezey, Technical Report NREL/TP-620-38994, October 2005.

(To receive a copy of this article email library@energylibrary.co.nz)

Pricing for load and wheeling charge considering transmission paths in deregulated power markets, Rui Li, Luonan Chen and Ryuichi Yokoyama, International Journal of Electrical Power & Energy System, Volume 27, Issue 7, (September 2005), Pages 496-505.

(To receive a copy of this article email library@energylibrary.co.nz)

An auction game model for pool-based electricity markets, Deqiang Gan, Jianquan Wang and Donald V. Bourcier, International Journal of Electrical Power & Energy System, Volume 27, Issue 7, (September 2005), Pages 480-487.

(To receive a copy of this article email library@energylibrary.co.nz)

Why Tax Energy? Towards a More Rational Policy, David M. Newbery, Energy Journal, Volume 26, Issue 3, July 2005, Pages 1-40

(To receive a copy of this article email library@energylibrary.co.nz)

Renewable energy policy goals, programs, and technologies

P. Komor, M. Bazilian, *Energy Policy*, Volume 33, Issue 14, September 2005, Pages 1873-1881

(To receive a copy of this article email library@energylibrary.co.nz)

High-voltage Overhead Power Lines and Property Values: A Residential Study in the UK,

Sims, S., Dent, P., (2005) *Urban Studies*, 42 (4), Pages 665-694.

(To receive a copy of this article email library@energylibrary.co.nz)

Turning great strategy into great performance,

Mankins, M.C., Steele, R., (2005) *Harvard Business Review*, 83 (7-8).

(To receive a copy of this article email library@energylibrary.co.nz)

"Somebody I Look Up To": Ethical Role Models in Organizations,

Gary Weaver, Linda Klebe Treviño and Bradley Agle, *Organizational Dynamics*, Vol 34, Issue 4, 2005.

(To receive a copy of this article email library@energylibrary.co.nz)

The psychology affecting electricity and gas customers,

Phillip Lewis. Vaasa EMG Report, 2001.

(To receive a copy of this article email library@energylibrary.co.nz)

Blast from the past - oldies but goodies from the Energy Library collection

A Critical Review of Biodiesel as a Transportation Fuel in Canada, Dr. Chandra B. Prakash, GCSI - Global Change Strategies International Inc. for the Transportation Systems Branch, Air Pollution Prevention Directorate, Environment Canada, 1998

The specific objectives for this study are:

- To review the past work on biodiesel's use as a transportation fuel in diesel engines.
- To analyze the available information on the impact of biodiesel on emissions, engine performance and durability.
- To assess the potential for biodiesel production and use in Canada.

Biomass: A Growth Opportunity in Green Energy and Value Added Products, Proceedings of the Fourth Biomass Conference of the Americas, ed. R.P. Overend and E Chornet, 1999.

Covers biomass production and integration with conversion technologies, carbon impacts, international biomass resources; biomass transformation into value added chemicals, liquid fuels, heat and power; policy - public issues and private initiatives.

The Effects of Overhead Transmission Lines on Property Values: A Review and Analysis of the Literature, Dr. Cynthia A. Kroll, Thomas Priestley, Edison Electric Institute Siting and Planning Task Force, 1992.

Research on the effects of overhead transmission lines on property values has expanded over the past fifteen years to include new methods of analysis and more detailed examination of the data. Conclusions as a result of these studies have varied widely, with some authors reporting no effects, others finding small effects, and still others reporting quite large effects. The purpose of this paper is to review and summarize the progress of research over the past fifteen years, to assess the knowledge gained from recent research, and to suggest directions for future studies.

Web resources

The Electricity Commission published an initial report in February 2005 prepared by Transpower called "[Impact of Manawatu Wind Generation on the Operation of the New Zealand Power System](#)". This report reviews the observed impacts on the power system and electricity market during November and December 2004 from the operation of Te Apiti and Tararua Wind Farms. The initial report has now been [finalised](#) with the inclusion of the analysis of a further four months of wind generation output data. You can find out more about the project [here](#).

[Stretching the boundaries - Wind energy technology review 2004-2005](#), Eize de Vries. Renewable Energy World, Sept-Oct 2004.

2004 will be remembered by the wind industry for a number of reasons, such as the advances made in turbine size and technology. Compared with 2004, the emphasis in 2005 will be on industry consolidation, prototype testing, and product optimization - with several new turbine prototypes and turbine upgrades being announced. Meanwhile, according to industry sources, huge growth in the US has increased demand for the machines and along with high steel prices this has increased the cost of wind turbines. The [AWEA Wind Power Outlook 2005](#) is now available.

The title says it all - a new Transpower commissioned report by Castalia report "[Transmission Regulation in New Zealand: A Distorted Reflection of Best Practice](#)" looks critically at the current approach to transmission regulation in New Zealand, and how it compares to international best practice. Another Castalia report on [Greenhouse Emissions](#) considers policies and targets for greenhouse emissions in New Zealand.

Power generation from windfarms in Europe will grow at least ten-fold by 2020, while output from solar PV will increase 45 times, according to an analysis of the continental green power market. The share of 34% from green power and 20% of primary energy is feasible by 2020 but it requires 'immediate policy actions in most member states', concludes the "[FORRES 2020: Analysis of the renewable energy sources' evolution up to 2020](#)" report.

A number of reports suggest that research and expertise within the energy sector is not as good as it should be, but the good news is that that New Zealand is doing better than most. A US report highlights the [drop in federal spending on research and development](#), while [an independent report from the Institute of Physics](#) in the United Kingdom suggests that they lack the necessary skills to achieve the

government's target of generating 10% of the country's electricity from renewables by 2010. In New Zealand, the [MoRST 2004 R&D Survey](#) shows \$1.59 billion worth of research and development was performed in New Zealand, showing that business R&D activity has increased 29% since 2002.

IEA [bioenergy publications](#) are now available on their site. They include the Final Summary Report on [Non-technical policy, regulatory, and market influences on the use of liquid biofuels, Biodiesel and Environment](#) by Manfred Wörgetter, BLT Wieselburg, Austria, [The Introduction of Biodiesel as a Blending Component to Diesel Fuel in Austria](#). Final Report of NTB-net Phase IV from Heinrich Prankl and Manfred Wörgetter, BLT Wieselburg, Austria, and [Standardisation of Biodiesel](#) by Heinrich Prankl. Also online are [Towards a UK Strategy for Biofuels](#) and [Liquid Biofuels and Renewable Hydrogen to 2050](#), [Expert Paper on the Global Impacts of Road Transport Biofuels](#), and [Liquid Biofuels and Renewable Hydrogen to 2050](#).

[BP Statistical Review of World Energy 2005](#) Published on 14th June 2005, this review provides high-quality and globally consistent data of the energy markets, with a series of statistics dating back to 1965. This site has lots of good features, including the ability to review by energy type, download data, and create energy charts according to energy type, region and year.

The UK Department of Transport paper [Our energy future - creating a low carbon economy](#) defines a long-term strategic vision for energy policy combining environmental, security of supply, competitiveness and social goals. Also on this page are links to documents on security of gas and electricity markets; estimates of primary energy demand and electricity generation; and powering future vehicles.

[Comparison of power efficiency on grid level](#). This benchmark study, commissioned by the Japanese Central Research Institute of Electric Power Industry, compares the efficiency of fossil-fired power generation in several industrial countries.

Food for thought

There's still lots of stuff around about smart grids and smart electricity networks, including an article on [smart technologies that provide alternatives to traditional power plant and line upgrades](#), a white paper on [The Emerging Smart Grid](#), ([summary](#) here) and a report on [what utilities are buying, how they are buying, and how they are responding to innovation and new technology](#), and a study on [smart energy in the Northwest US](#).

Want to control the minds of others? Harvard psychologist Howard Gardner, noted for his theory of multiple intelligences, recently published "Changing Minds: The Art and Science of Changing Our Own and Other People's Minds." Gardner's research reveals the best ways to convince others (or yourself) to adopt a different viewpoint in various settings, including business. This [interview with Gardner](#) outlines his research and gives an insight into his theories.

[Top Ten Utility Green Power Programs](#). The US National Renewable Energy Laboratory has compiled extensive data on utility green power programs and produced "Top Ten" lists of program characteristics and results: total sales of renewable energy to program participants; total number of customer participants; customer participation rates; and the premium charged to support new renewables development.

And finally, who can resist a [study that says that 50% of studies](#) are probably wrong?