

Energy Library update June 2006

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Featured Energy Library Journals

Chartwell's Best Practices for Utilities & Energy Companies

Published monthly, this substantial newsletter contains for case studies and interviews with executives and managers from the utilities and energy industries. Covers: restructuring, productivity, new product research and development, workplace management, customer care and [more...](#)

(To go on the circulation list email kmcara@energylibrary.org.nz Ref: **06Chartwells**)

Journal of Occupational Health and Safety Australia and New Zealand

Published six times a year, this peer reviewed journal covers risk management, ergonomics, hazardous substances, manual handling, back injuries, training, stress and [more....](#)

(This title is available on circulation or as part of our table of contents service. To find out more email kmcara@energylibrary.org.nz Ref: **06Occupational**)

New books, standards and reports

Twilight in the Desert: The Coming Saudi Oil Shock and the World Economy

Simmons, Matthew R. (2005) Hoboken: Wiley

This is a detailed discussion of the extent of Saudi Arabia's oil reserves, on which so much of the Western world depends. Parts 1 and 2 give technical background to understanding the field analysis covered in parts 3 and 4; this analysis is based on papers published by the Society of Petroleum Engineers. The author's conclusion, that Saudi reserves are at or beyond peak production, should make both governments and consumers extremely concerned. An authoritative book on this major issue; the text is supported by substantial appendices providing technical backup for the discussion.

(To borrow this book email library@energylibrary.org.nz Ref: **06Simmons**)

The End of Oil: On the edge of a perilous new world

Roberts, Paul (2005) New York: Mariner Books.

We're all aware that oil is hugely important to our modern way of life. We are also aware that supplies are not infinite, and the number of times one hears of "peak oil" shows that many people are concerned about the implications of that.. Paul Roberts explores the current state of the industry - the difficulty of estimating reserves, and the political, economic and environmental considerations driving supply and demand, especially exploration. He also discusses the alternatives, and why so many of those promising ideas have still not developed into viable substitutes for oil. A very digestible book with a scary message for the world.

(To borrow this book email library@energylibrary.org.nz Ref: **06Roberts**)

Saving Oil in a Hurry Paris: International Energy Agency (2005)

This book was published to help countries find ways to improve their ability to cope with oil market instability and the future supply problems which have been predicted. An analysis is given of potential policies and measures as well as the economics of the various options. Possible transport reduction schemes are examined (telecommuting, car-pooling etc) along with information that can be used to decide which policies and measures will work in different countries. This book will be of particular interest to those involved in energy policy.

(To borrow this book email library@energylibrary.org.nz Ref: **06IEA**)

Stress Free for Good: 10 scientifically proven life skills for health and happiness

Luskin, Fred and Pelletier, Kenneth (2005) New York: Harper Collins

If you're stressed about the end of oil or anything else for that matter then this book may be of interest to you. Each chapter introduces a life skill for stress management (belly breathing, muscle tensing and relaxing, visualisation etc). Forward by Andrew Weil M.D.

(To borrow this book email library@energylibrary.org.nz Ref: **06Luskin**)

Handbook Biomass Gasification Knoef, Harrie (ed.) (2005) Enschede: Biomass Technology Group

This handbook is designed for both newcomers to the industry and those familiar with the industry. It is the final handbook of the Gasnet project sponsored by the European Commission and Novem. Chapters have been written by specialists, and cover a wide range of topics, such as Success stories on biomass gasification, and Public perception and social marketing of new biomass conversion technologies, as well as detailed technical material. (To borrow this book email library@energylibrary.org.nz Ref: **06Knoef**)

Energy policy: engineering a national energy strategy (2006) Wellington: Institution of Professional Engineers New Zealand (IPENZ)

This document has been prepared by a Working Group of Members from IPENZ. It presents an overview of the energy issues relating to supply and security in New Zealand and provides recommendations for the government related organisations. It looks at some high priority issues and possible actions for consideration.

(To borrow this report email library@energylibrary.org.nz Ref: **06IPENZ**)

Hot Climate, Cool Commerce: A Service Sector Guide to Greenhouse Gas Management Samantha Putt del Pino, Ryan Levinson and John Larsen (2006)

Washington: World Resources Institute

This report outlines ways that the service sector can be proactive in implementing energy-efficiency measures. Case studies of high profile companies are included.

(This report is [available here as a PDF](#))

AS/NZS 3823.2: 2005 Performance of electrical appliances - Airconditioners and heat pumps. Part 2: Energy labelling and minimum energy performance standard (MEPS) requirements (includes June 2006 amendment)

(To borrow this standard email library@energylibrary.org.nz Ref: **06/3823.2**)

AS/NZS 4665.2: 2005 : Performance of external power supplies. Part 2: Minimum energy performance standards(MEPS) requirements

(To borrow this standard email library@energylibrary.org.nz Ref: **06/4665.2**)

AS/NZS 4692.2: 2005. Electric water heaters. Part 2: Minimum Energy Performance Standard (MEPS) requirements and energy labelling

(To borrow this standard email library@energylibrary.org.nz Ref: **06/4692.2**)

AS/NZS 4782.2: 2004. Double - capped fluorescent lamps- Performance specification. Part 2: Minimum Energy Performance Standard (MEPS)

(To borrow this standard email library@energylibrary.org.nz Ref: **06/4782.2**)

Journal Articles

Some references on power blackouts and outages held by / or available through the Energy Library. Wellington, June 2006.

(To receive this document email library@energylibrary.org.nz Ref: **06EnergyLibrary**)

Performance and emissions characteristics of biodiesel from soybean oil M Canakci. Proceedings of the Institution of Mechanical Engineers: Part D Journal of automobile engineering Jul 2005. Vol. 219 (7), p. 915-922

Emissions and engine performance of petroleum diesel fuels and biodiesel from soybean are compared.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Canakci**)

On track with customer care. Coleman, Rufus. Transmission & Distribution World: Jan 2006, Vol. 58(1), p26-32

The article presents information on the Customer Care Center of Arizona Public Service (APS) in Phoenix, Arizona, U.S. that handles the calls of the customers. The center has 175 call center associates handling calls. Alan Wessel, former leader, customer care center said that APS is unique among utility companies because of the steady customer growth, customers moving in and out of the service area and the service plan choices offer to them by the company. To tackle the problem of managing the customer data APS installed a new customer information system.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Coleman**)

Duke uses outage data to find the biggest bang for its system improvement buck.

Taylor, Lee, Short, Tom. Transmission & Distribution World Feb 2006, Vol. 58(2) p58-64

This article focuses on the significance of using outage databases in improving the reliability of the transmission and distribution networks of Duke Power Co. in the U.S. Outage databases are helpful in identifying problems which may lead to disturbances, it can identify which circuits to target and judge the results of the improvement programs.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Taylor**)

Strong wind uncovers weaknesses. Hansen, Teresa. Power Engineering. May 2006. Vol. 110 (5) p36, 3 pgs

Discusses the challenges facing the wind power industry in the U.S. Increase in wind energy installations in 2005; Factors that contributed to the increase; Impact of federal policy regarding tax credits on wind project development; Issues arising from the transition of operations and maintenance responsibilities from the original equipment manufacturer to site staff.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Hansen**)

Green electricity... are you being conned? Smith, Jeremy. The Ecologist. Jun 2005. Vol.35 (5) p56, 7 pgs

Examines company offers to entice environmentally concerned consumers, including a 100% green tariff offer to consumers and a wind generator offer of a carbon calculator which allows a customer to estimate how much pollution can be cut by signing up with the company.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06SmithJ**)

Mooring Research to Support Marine Energy Development. George H Smith, Lars Johanning. Sea Technology. Apr 2006. Vol.47 (4) p23, 4 pgs

Commercial use of wave energy for electricity generation is attracting more interest. To take better advantage of the better wave climate, the majority may operate in deep waters. The design differences between a mooring floating wave energy converter and a conventionally moored vessels are discussed.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Johanning**)

Binary and ternary liquid metal-steam cycles for high-efficiency coal power stations. G Angelino, C Invernizzi. Proceedings of the Institution of Mechanical Engineers: Part A: Journal of power and energy. May 2006. Vol. 220 (3); p195, 11 pgs

Technical article reviewing use of metal vapour conversion cycles for power generation.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Angelino**)

The future of Britain's electricity supply - vision or muddle? Malcolm Kennedy. Proceedings of the Institution of Mechanical Engineers: Part A: Journal of power and energy. May 2006. Vol. 220 (3) pg. 1, 10 pgs

Discusses the balancing act of running this competitive and strategically important business in the United Kingdom. Reviews the pressures from various quarters, including the government, public opinion and the regulators.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Kennedy**)

Remotely Accessed Photovoltaic Power Project. William J Hutzel, William M Healy. Journal of Engineering Technology. Spring 2006. Vol.23, (1) pg. 32, 8 pgs

Interest in solar energy is high but it does not have high coverage in undergraduate research programmes. Cost of equipment is part of the problem. Describes student use of freely available online resources for estimating the number of photovoltaic panels needed to provide supplementary power for a typical residence.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Hutzel**)

Electricity market reform: What has the experience taught us thus far?

Fereidoon P. Sioshansi. Utilities Policy, Volume 14(2) June 2006, p63-75

Despite considerable progress in understanding electricity markets and how best to introduce market reform, many design and implementation issues remain. At a more fundamental level, there is no consensus on which model would work best in a given situation and what constitutes a "functional" market.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Fereidoon**)

Obstacles to Effective Strategy Implementation. Lawrence G. Hrebiniak
Organizational Dynamics Volume 35(1) (2006) p12-31

Formulating strategy is one thing. Implementing it throughout the organization ... well, that's the really challenging part. Unfortunately, most managers plan effectively, but fall short when identifying, confronting, and eliminating the major obstacles to strategy execution. This article identifies the major obstacles to execution success. It presents data from managers actively involved in strategy implementation in their companies, thus providing information from individuals with experience in the execution process. The article then develops a model of implementation and an approach to managing change that, together, can help managers make strategy work more effectively.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Hrebiniak**)

A life cycle evaluation of change in an engineering organization: A case study
Amarjit Singha and Max Maher Shourab International Journal of Project Management.
Volume 24 (4) May 2006, p337-348

The change process is explored and a life cycle model of change is analyzed to see how a large public client organization perceives and reacts to change. Among the findings are that whereas general desire for change is high through a high commitment to change, the upper leadership does not appropriately follow through with the change process, leaving the middle and lower-level engineers to carry a burden for which they are ill-prepared. Engineers mostly agree that there is no incentive to implement changes; many agree that there is little help available for transitional services. This case study helps practicing managers understand their responsibilities in managing change.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Singha**)

Locus of control and attitudes to working in virtual teams. Liz Lee-Kelley.
International Journal of Project Management Vol 24 (3) (April 2006) p234-243

Global projects using new computing and communication technologies for at-distance communication and coordination are increasingly popular. As a result, team members are often located geographically and temporally apart, while working towards a common project goal. This paper takes a micro-level look at those actively involved in distributed team working.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Lee**)

Global challenges in energy. James P. Dorian, Herman T. Franssen and Dale R. Simbeck. Energy Policy Volume 34 (15) (October 2006) p1984-1991

Environmental and security concerns are stimulating global interest in hydrogen power, renewable energy, and advanced transportation technologies, but no significant movement away from oil and a carbon-based world economy is expected soon. Over the longer-term, however, a transition from fossil fuels to a non-carbon-based economy will likely occur, affecting the type of environment future generations may encounter. Key challenges will face the world's energy industry over the next few decades to ensure a smooth transition—challenges which will require government and industry solutions beginning as early as today. This paper identifies four critical challenges in energy and the choices which will have to be made on how best to confront growing pollution caused by fossil fuels and how to facilitate an eventual revolutionary-like transition to a non-carbon-based global economy.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Dorian**)

The grin of the Cheshire cat. Steve Thomas, Energy Policy Volume 34, Issue 15 (October 2006) p1974-1983

This article discusses the problems that privatisation, liberalisation and de-regulation have created in the electricity industry. It outlines what has been done to try and repair the damage. This is easier for developed countries than developing countries who have often suffered serious under-investment in the privatised market. The developed world has a responsibility to help these countries and that International Financial Institutions should admit their mistakes and review their policies.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Thomas**)

Alleged Transmission Inadequacy: Is Restructuring the Cure or the Cause?

Timothy J. Brennan. The Electricity Journal Vol 19 (4) (May 2006) p42-51

There is a chance that inadequate separation between generation and transmission may result in reduced investment, in order to preserve incumbent market power in generation. However, consideration of transmission price caps and coordinated generation investment support other analyses that conclude that vertical separation itself may be a culprit.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Brennan**)

Inching Our Way to a Smarter Power Grid. Peter Asmus. The Electricity Journal Vol 19, Issue 4 (May 2006) p52-55

Maybe, as one expert suggests, we should focus a bit less on managing legislation, regulation, and uncertainty, and instead start leading customers to a new era of prosperity. After all, time is running out.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Asmus**)

A Simple Solution to a Very Old Problem. Hoff Stauffer and Jurgen Weiss. The Electricity Journal Vol 19 (4) (May 2006) p56-59

The authors propose to eliminate the perverse incentives utilities have to resist energy-reduction options by guaranteeing approved fixed-cost recovery, while offering positive incentives, as well.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Stauffer**)

Renewable Energy Development Incentives: Strengths, Weaknesses and the Interplay. Gunnar Birgisson and Erik Petersen. The Electricity Journal Vol 19 (3), April 2006, p40-51

Most existing mechanisms cannot be relied on to achieve long-term growth of renewable energy, either because of their own weaknesses or because of unpredictable variables. If there is widespread support for pursuing the benefits of renewable energy, then its growth should be ensured through ambitious, long-term, and widespread mandatory objectives, rather than by relying on voluntary choices or competitive forces.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Birgisson**)

Biomass and multi-product crops for agricultural and energy production—an AGE analysis. Adriana M. Ignaciuk and Rob B. Dellink. Energy Economics Vol 28 (3) (May 2006) p308-325

By-products from agriculture and forestry can contribute to production of clean and cheap (bio)electricity. To assess the role of such multi-product crops in the response to climate policies, we present an applied general equilibrium model with special attention to biomass and multi-product crops. The potential to boost production of bioelectricity in Poland through the use of multi-product crops turns out to be limited to only 2–3% of total electricity production. Further expansion of the bioelectricity sector will have to be based on biomass crops explicitly grown for energy purposes. The competition between agriculture and biomass for scarce land remains limited. In the scenarios, production of agricultural goods decreases at most with 5%, and the largest price increase for agricultural goods amounts to 5%. These changes in production induce substantial changes in land allocation: around 250,000 ha is converted from agricultural production to forestry and willow plantations.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Ignaciuk**)

The Sustainable Use of Geothermal Resources. Valgardur Steffansson and Gudni Axelsson. Geothermal Bulletin Vol 35(2) Mar/Apr 2006 p68-72

Discusses the different interpretations of “sustainability”. Compares and contrasts sustainable management of geothermal resources with a biological resource (fish stocks). Outlines management strategies for the sustainable utilization of geothermal resources.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Steffansson**)

A Residential Energy Demand System for Spain. Labandeira, Xavier; Labeaga, José M.; Rodríguez, Miguel. Energy Journal, 2006, Vol. 27 (2), p87-111

Sharp price fluctuations and increasing environmental and distributional concerns, among other issues, have led to a renewed academic interest in energy demand. In this paper we estimate, for the first time in Spain, an energy demand system with household microdata.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Labandeira**)

Leading pipeline experts say “Get ready for construction boom”. Tubb, Rita. Pipeline & Gas Journal, v233 (5), May 2006: p22 (5 pages)

Billions of spending planned on North American energy infrastructure. LNG is predicted to be one of the fastest growing segments. IEA estimates of 1.7 trillion to be spent on new energy production, transmission and distribution infrastructure in the U.S. and Canada over the next 30 years.

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Tubb**)

Recent change in the natural gas market and the need for more LNG in U.S. Mokhatab, Saejd; Poe, William A. Pipeline & Gas journal, v233 (4), April 2006: p 34 (6 pages)

(To receive a copy of this article email library@energylibrary.org.nz Ref: **06Mokhatab**)

Oldies and goodies from the Energy Library collection

Future Drive: Electric vehicles and sustainable transportation

Sperling, Daniel. Washington D.C.: Island Press. (1995)

In areas such as automotive technology and public policy Sperling discusses various initiatives that could improve the impact of travel on the environment.

(To borrow this book email library@energylibrary.org.nz Ref: **06Sperling**)

You Don't Have to Go Home from Work Exhausted: The energy engineering approach

Mcgee-Cooper, A., Dallas: Bowen & Rogers (1990)

Learn how to enhance your mental energy and performance in the work place. A range of topics are explored such as the role of hemispheric dominance in work styles and how to build resilience through a playful mindset.

(To borrow this book email library@energylibrary.org.nz Ref: **06Mcgee**)

The Personal Efficiency Program: How to Get Organized to do More Work in Less Time

Gleeson, K., N.Y.: Wiley (1994)

(To borrow this book email library@energylibrary.org.nz Ref: **06Gleeson**)

This personal program looks at various ways to enhance your workplace efficiency. How to improve your organisation and time management skills so that you can meet the multiple demands of a workplace environment with ease.

Value Engineering : Practical applications for design, construction, maintenance & operations.

Dell'isola, A., Kingston: R.S. Means Co. (1997)

This book defines and analyses the various principals and methods of application of value engineering to the construction industry process. These principals are demonstrated using a range of case studies in a variety of environments such as corporate, commercial, industrial and civil.

(To borrow this book email library@energylibrary.org.nz Ref: **06Dellisola**)

Global Oil Trends

Sharma, Shankar and Tan, Joseph L.H., Singapore: Asean Economic Research Unit (1991)

Focusing in particular on the Asia-Pacific oil market, this book presents an in-depth discussion of past, present and future oil supply and demand. The 1990 oil crisis is analysed as is the effect of the green movement on the global oil industry. This book could be of interest to everyone from academics to energy planners.

(To borrow this book email library@energylibrary.org.nz Ref: **06Sharma**)

Hubbert's Peak

Deffeyes, Kenneth S., Princeton: Princeton University Press (2001)

In 1956 geophysicist M.K. Hubbert calculated that the '70s would see the U.S. reach its highest level of oil production. This prediction was condemned at the time but was proven accurate in 1970. In this book Deffeyes applies Hubbert's logic and concludes that world oil production will peak by the end of this decade. The ramifications are discussed as is the fact that none of the solutions proposed so far will be enough to stop catastrophe.

(To borrow this book email library@energylibrary.org.nz Ref: **06Deffeyes**)

Web resources

New Zealand

The Conferenz 8th Annual New Zealand Energy Summit is being held on the 17th, 18th & 19th of July at the Duxton Hotel, Wellington. Find out more at the [Conferenz website](#).

The Ministry of Economic Development has improved the way it calculates petrol and diesel price margins, which are published weekly on its [website](#).

Things are [heating up](#) in the Great South Basin over the potential gas and oil prospects in the area. If you missed the June 3rd article "The Gas Rush" in the Dominion Post you can request a copy (text only) from us.

(email library@energylibrary.org.nz Ref: 06Steeman)

The 2006 International Film Festival features movies on the [electric car](#), the [end of oil](#) and [global warming](#) (an interesting review of this one is available [here](#)).

Rave about wave power: Recent newspaper headlines are highlighting possibilities about a [Cook Strait power link](#). EECA has a [brochure on wave and tidal energy](#) and a report prepared for them by Power Projects Ltd called "[Marine energy : summary of current developments and outlook for New Zealand, 2005](#)" may be of interest. E.P.M. Brown was a contender for the IPENZ Fulton-Downer Award in 1993 for "Wave power resource investigation in New Zealand. Also available online is a 1980 publication "[Ocean wave studies in Western Cook Strait](#)".

For an international perspective you could check out the [EPRI Ocean Energy Site](#).

Note: Energy Library staff are available to research more resources on the topic (or any other topic). Costs depend on your current contract with Energy Library.

International

Beijing's first "[no-car day](#)" launched recently did not gain enough support to be considered a success. Meanwhile, in the States the domestic auto industry is faltering and the CEOs of General Motors, Ford and DaimlerChrysler have [pushed](#) for Congress to offer incentives for ethanol distribution.

Can our modern levels of mobility be made sustainable? This is the question behind [The Challenge Bibendum](#), a technological competition which sees advances in the field of environment-friendly vehicles put to the test.

[Shell and Anglo American have formed an alliance](#) for the development of clean coal projects (eg converting coal into chemicals, hydrogen etc). The two companies will also push for regulatory changes that would make carbon capture and storage more feasible.

Positive feedback from the carbon cycle: [Two articles](#) published recently about underestimation of global warming forecasts have provoked many feedback comments (121 to date). You may also be interested to look at the whole website called [RealClimate](#) which aims to provide a non economic and non political look at climate changes.

According to the National Academy of Sciences [Earth is the Hottest it's been in 2000 years](#).

The [Scottish Executive has put out a planning guide](#) as part of its aim to promote micro-generation for all (solar panels, small wind turbines and earth energy heat pumps).

Food for thought

Apparently it's possible to convert the energy of children at play into electric power. View the video "Fueling it with fun" at the [Daily Planet website](#).

Earlier this month a mouse the size of a human toe managed to short circuit a 40-megawatt power plant near Phnom Penh in Cambodia, resulting in power being cut to over 40 per cent of the city.

And finally: Need more energy? To be in to win a **king-size bar of energy chocolate** [email us](#) the answer to the following question (put "Competition" in the subject line. Draw closes June 30th):

There are 4.184 kilojoules in 1 calorie. If a 50g bar of energy chocolate contains 1050kjs then how many calories does it contain?