

Energy Library Update August 2006

A reminder that the Gas Summit is taking place in September in Wellington on 25 - 26 September. Key presentations will be from Greymouth Petroleum, Todd Energy, Saha International, Crown Minerals and others associated with the gas industry. Check out the [website](#) for more details

If you do not wish to receive future updates please reply to this email with "Unsubscribe" in the subject line.

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Featured Energy Library Journals

Energy World

This title is published 10 times annually by the Energy Institute (UK). Topics covered include: energy industry news, feature articles on a wide range of energy-related subjects, events diaries, training information etc. Find out more [here](#) (To go on the circulation list or borrow a sample issue for evaluation please email kmarcar@energylibrary.org.nz **Ref: 08EnergyWorld**)

Organized Executive : How to accomplish more in Less Time

This monthly publication gives time-management techniques that have helped CEOs organize their lives and make their work more efficient. Very short and easy to read—typically includes sections on; timesaving gadgets, technology shortcuts, productivity boosters, powerful management, proven effective habits. (To go on the circulation list or borrow a sample issue for evaluation please email kmcara@energylibrary.org.nz **Ref: 08Organized**)

New Standards, Books and Reports

AS/NZS 3788 : 2006 Pressure equipment – In-service inspection

Provides up-to-date information on the inspection, repair and alteration of pressure equipment.

To borrow this standard email library@energylibrary.org.nz **Ref: 08Pressure**)

Towards carbon-neutral and climate-adapted domestic buildings :

background document / Roman Jaques and Agnes Sheridan. - [Porirua, N.Z.] BRANZ, 2006. - 44 p.

(To borrow this book email library@energylibrary.org.nz **Ref: 08Jaques**)

Guide to sustainable office fitouts. Wellington, Ministry for the Environment, 2005. 57p. ISBN: 0-478-25943-3

Aimed at project managers, this document provides some guidelines for fitting out new offices or refurbishing existing offices in an environmentally friendly way.

(To borrow this book email library@energylibrary.org.nz **Ref: 08Guide**)

A practical guide to exploiting low temperature geothermal resources/ I.

Thain, A.G.Reynes and T. Hunt. Lower Hutt, Institute of Geological and Nuclear Sciences Limited, 2006. 76p (GNS Science Report 2006/09) ISBN 0-478-09907-X

(To borrow this book email library@energylibrary.org.nz **Ref: 08Thain**)

Oldies from our collection

Damage mechanisms and life assessment of high-temperature components /

R. Viswanathan. Ohio, ASM International, 1989. 497p.

Brings together the theoretical aspects of high-temperature damage phenomena and the practical aspects of assessing the actual damage on a component-specific basis. Includes:- toughness, embrittlement phenomena, creep, fatigue, and creep-fatigue interaction, life prediction for boiler components; life assessment of steam turbine components and more.

(To borrow this book email library@energylibrary.org.nz **Ref: 08 Viswanathan**)

Transforming electricity: the coming generation of change.

Patterson, Walt. London., Royal institute of International Affairs (1999).

This is a history of the electricity industry worldwide, with reference to change past and change to come. It discusses the possibilities of different ways of organising the industry; it is interesting to compare the discussion with the development of the industry in New Zealand.

(To borrow this book email library@energylibrary.org.nz **Ref: 08 Patterson**)

Memories and machines: the pattern of my life. Ricardo, Harry R. London, Constable. 1968.

This is an autobiography of one of the great men in the development of the engine. Harry Ricardo made important contributions to the study of knock, and to increasing the power and fuel economy of engines. The book is very readable, and also includes some early photographs of people and engines.

(To borrow this book email library@energylibrary.org.nz **Ref: 08 Ricardo**)

We hold a report which looks at one Ricardo engine-

An investigation of the Ricardo e6/t engine as a development test bed for diesel-to-spark ignition conversions. McFeaters, J.S. Wellington: Ministry of Energy, 1990. Energy Research & Development Report RD8811.

This work helps to establish the usefulness of the single cylinder Ricardo engine as a testbed for research, as well as providing a data base for use in modelling combustion processes and establishing an optimal combustion chamber configuration for CNG use.

(To borrow this book email library@energylibrary.org.nz **Ref: 08 McFeaters**)

Roxburgh dam and power station is 50 this year. To mark this milestone, we have selected 2 titles in our oldies section which give a glimpse into the talent, stamina and fortitude of those who developed the hydro –electric industry in New Zealand

Dam dwellers: end of an era. Living with hydro-electricity development in the Waitaki Valley and Mackenzie Country. Sheridan, Marion. (1995) Twizel, N.Z.: Sheridan Press.

Marion Sheridan knows the Waitaki Valley and the Mackenzie Country well, as she has lived in the area since 1962. She writes of the dam building and also the communities that grew and flourished as the development of the project progressed. (To borrow this book email library@energylibrary.org.nz **Ref: 08 Sheridan**)

Power to the people: 100 years of public electricity supply in New Zealand.

Rennie, Neil. (1989). Wellington: Electricity Supply Association.

The history of electricity in NZ is discussed in terms of the changes, and particularly the social impact. There are many photographs, maps, and tables.

(To borrow this book email library@energylibrary.org.nz **Ref: 08 Rennie**)

Journal Articles

10 Ways to Create Shareholder Value.

Alfred Rappaport. Harvard Business Review, Volume 84, Issue 9 (September 2006) Pages 66-77

Executives have developed tunnel vision in their pursuit of shareholder value, focusing on short-term performance at the expense of investing in long-term growth. It's time to broaden that perspective and begin shaping business strategies in light of the competitive landscape, not the shareholder list. In this article, Alfred Rappaport offers ten basic principles to help executives create lasting shareholder value.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08Rappaport**)

The Human Factor I: Attracting, Retaining, and Motivating Capable People.

Minnesh Kaliprasad. Cost Engineering, Volume 48, Issue 6 (Jun2006) Pages 20-26

In a recent survey, 47 percent of CEOs of the companies surveyed believed that the greatest challenge in the new economy is finding and retaining good people.

Effectively managed staff are also said to be comfortable within the organization and usually believe they own the business. This is when their commitment and loyalty are at its highest and therefore they rarely try to find a way to depart from the organization.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Kaliprasad**)

The Decision to Trust.

Robert F.Hurley. Harvard Business Review, Volume 84, Issue 9 (September 2006) Pages 55-62

Surveys have shown that 80% of Americans don't trust corporate executives and--worse--that roughly half of all managers don't trust their own leaders. Mergers,

downsizing, and globalization have accelerated the pace of change in organizations, creating a crisis of trust that didn't exist a generation ago. Leaders who understand how trust is built can actively influence its development, resulting in a more supportive and productive work environment and, not incidentally, a competitive advantage in the war for talent.

(For a copy of this article email library@energylibrary.org.nz Ref: 08 Hurley)

Project Scope Management

Asadullah Khan. Cost Engineering, Volume 47, Issue 6 (June 2006) Pages 12-16
Managing the scope of a project is the most important function of a project manager. Effective scope management of a project also ensures the successful management of other key project management areas, including time, cost, and quality. Project scope management can be further sub-divided into its components which include project initiation, scope planning, scope definition, scope verification, and scope change control.

(For a copy of this article email library@energylibrary.org.nz Ref: 08 Khan)

Look back at the Long Path to Mandating Electric Reliability Standards through the Energy Policy Act of 2005

Ellen Swyler Young. The Electricity Journal, Volume 19, Issue 6 (July 2006) Pages 11-23

The Act was the culmination of more than eight years of legislative effort in U.S. Congress. During this period, the nation saw the Western electricity crisis of 2000-01, the Sept. 11 attacks, the collapse of Enron, the growth of RTOs, and the August 2003 blackout. Each of these influenced the dynamics of the debate.

(For a copy of this article email library@energylibrary.org.nz Ref 08 Young)

Reliability based design methods for overhead lines: Advantages, applications and comparisons / CIGRE Technical Brochure 289 WG B2.06

Elias Ghannoum and others. Electra No. 225 (April 2006) Pages 33-45

This Technical Brochure promotes Reliability Based Design (RBD) methods for Overhead Lines and provides recommendations to make Standard IEC 60826 Ed.3, October 2003 and other relevant RBD Codes (ASCE 74, EN 50341) more consistent.

(For a copy of this article email library@energylibrary.org.nz Ref: 08Ghannoum)

The political economy of an energy tax: The United Kingdom's Climate Change Levy

David Pearce. Energy Economics, Volume 28, Issue 2 (March 2006) Pages 149-158
Energy taxes designed to control energy consumption, and to assist the achievement of climate change control targets under the Kyoto Protocol, are fairly common in European Union countries. Yet many of these taxes bear little resemblance to the design guidance that is given in economics textbooks. A closer look at the factors that influence real world policy design should help policy-oriented economists in designing measures that have a greater chance of adoption.

(For a copy of this article email library@energylibrary.org.nz Ref 08 Pearce)

In-Depth Review of United Kingdom Achievements Under Framework Convention on Climate Change.

T.J. Hammons. International Journal of Power and Energy, Volume 26, Issue 2 (2006) Pages 171-185

Provides a summary of climate change policies and measures in the U.K. Covers energy, and environmental policies; greenhouse inventory information (inventory preparation and overall emission trends); policies and measures (cross-sectoral policies and measures, energy production and transportation, residential and commercial sectors, transport, industry, agriculture, and waste); and total projections and total effect of policies and measures

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Hammons**)

Understanding the Benefits of Dispersed Grid-Connected Photovoltaics: From Avoiding the Next Major Outage to Taming Wholesale Power Markets.

Steve E. Letendre and Richard Perez. The Electricity Journal, Volume 19, Issue 6 (July 2006) Pages 64-72

Thanks to new solar resource assessment techniques using cloud cover data available from geostationary satellites, it is apparent that grid-connected PV installations can serve to enhance electric grid reliability, preventing or hastening recovery from major power outages and serving to mitigate extreme price spikes in wholesale energy markets

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Letendre**)

The maturation of a technology: predictive emission monitoring.

Paul S. Reinermann. Chemical Engineering, Volume 113,,Issue 7 (July 2006) Pages 50-55

The first PEMS was used in 1992, and since then 250 have been installed worldwide. The effectiveness of PEMS has been proven in many types of process units, combustion configurations and fuels types

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Reinermann**)

Bibliography of relay literature, 2003 Committee Report.

T.S. Sidhu and others. IEEE Transactions on Power Delivery, Volume 21, Issue 1 (January 2006) Pages 56-65

Coverage:- relaying algorithms, distribution and network protection, transmission line protection, relay input sources, rotating machinery protection, fault and system calculations, maintenance, testing, analysis and modeling, surge phenomena

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Sidhu**)

Consumer attitudes towards domestic solar powered systems

Adam Faiers and Charles Neame. Energy Policy, Volume 34, Issue 14 (September 2006) Pages 1797-1806

The success of the UK policy to reduce carbon emissions is partly dependent on the ability to persuade householders to become more energy efficient, and to encourage installation of domestic solar systems. Solar power is an innovation in the UK but the current policy of stimulating the market with grants is not resulting in widespread adoption.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Faiers**)

The timing of biological carbon sequestration and carbon abatement in the energy sector under optimal strategies against climate risks.

Vincent Gitz and others. The Energy Journal, Volume 27, Issue 3 (2006) Pages 113-133.

An economic rationale to the debate on carbon sequestration..

(For a copy of this article email library@energylibrary.org.nz Ref: 08 Gitz)

Estimating volumes and costs of forest biomass in Western Montana using forest inventory and geospatial data.

D.Loeffler, D. Calkin and R. Silverstein. Forest Products Journal, Volume 56, Issue 6 (2006) Pages 31-37.

Utilizing timber harvest residues (biomass) for renewable energy production provides an alternative disposal method to onsite burning that may improve the economic viability of hazardous fuels treatments. Accurate estimates of biomass volumes and costs of collection and delivery are essential if investment in renewable energy production is to occur. This article discusses a spatial framework for estimating biomass volumes and costs of availability using publicly available data and models.

(For a copy of this article email library@energylibrary.org.nz Ref: 08Loeffler)

New Saving Opportunity: On-demand Industrial Ventilation

Ales Litomisky. Energy Engineering, Volume 103, Issue 3 (2006) Pages 35-40

Discusses energy saving in industrial ventilation systems by using an innovative "on demand" system instead of a conventional industrial ventilation system which can consume 70 percent more energy than necessary. Data from 130 factories were analyzed. It is estimated that potential savings in the U.S. could be 26 billion KWh. There are eighty on-demand systems currently installed in the U.S. and Europe.

(For a copy of this article email library@energylibrary.org.nz Ref: 08 Litomisky)

Valuation of International Oil Companies.

Petter Osmundsen and others. The Energy Journal, Volume 27 Issue 3 (2006) Pages 49-64.

Findings are that variation in company valuations is mainly explained by the oil price, oil and gas production and to some extent reserve replacement.

(For a copy of this article email library@energylibrary.org.nz Ref: 08 Osmundsen)

Control analysis of the wind turbine with transmission to split power

T Zhand, W Li and Y Du. Proceedings of the Institution of Mechanical Engineering: Part A: Journal of Power and Energy, Volume 220, Issue A5 (August 2006) Pages 415-424

(For a copy of this article email library@energylibrary.org.nz Ref: 08 Zhand)

An advanced oxy-fuel power cycle with high efficiency

Proceedings of the Institution of Mechanical Engineers: Part A: Journal of power and energy, Volume 220, Issue A4 (June 2006) Page 315-

An innovative oxy-fuel power cycle is proposed as a promising CO2 emission mitigation solution.

(For a copy of this article email library@energylibrary.org.nz Ref: 08 Advanced)

Production of Electricity from Proteins Using a Microbial Fuel Cell

Jenna Heilmann and Bruce E Logan. Water Environment Research, Volume 78, Issue 5, (May 2006) Pages 531-537

Generation of electricity from proteins and protein rich wastewater (meat packing wastewater, bovine serum albumin) using a single chamber microbial fuel cell.
(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Heilmann**)

Savings in Steam Systems : a Case Study.

Nevena Iordanova. Energy Engineering. Volume 103, Issue 1 (2006) Pages 59-77
Armstrong Service Inc (ASI) conducted an engineered evaluation at an ammonium nitrate manufacturing facility. The purpose of this evaluation was to identify energy losses and system improvements in the steam and condensate systems. Overall the evaluation identified five steam savings proposals with an average simple payback of 2.9 years.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Iordanova**)

Anaerobic Codigestion of Municipal, Farm, and Industrial Organic Wastes: A Survey of Recent Literature

Felipe Alatraste-Mondragon and others. Water Environment Research Volume 78, Issue 6 (June 2006) Pages 607-636

The main advantages of codigestion technology are improved methane yield because of the supply of additional nutrients from the codigestates and more efficient use of equipment and cost-sharing by processing multiple waste streams in a single facility. Codigestion of organic wastes with municipal wastewater sludge can increase digester gas production and provide savings in the overall energy costs of plant operations. Methane recovery also helps to reduce the emission of greenhouse gases to the atmosphere. The goal of this literature survey was to summarize the research conducted in the last four years on anaerobic codigestion to identify applications of codigestion at WWTPs

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Mondragon**)

Sustainable development duties :new roles for UK economic regulators

Gill Owen. Utilites Policy, Volume 14, Issue 3 (September 2006) Pages 208-217
When the utility regulators were established in the UK their primary duties and roles were focused on economic regulation – setting price controls for monopolies and promoting competition where possible. The increasing emphasis in government policy on sustainable development has led to pressures on the regulators to pay greater attention to social and environmental concerns alongside economic ones.

(For a copy of this article email library@energylibrary.org.nz **Ref 08: Owen**)

The Paper Alternative.

Barry Fuller and others. Civil Engineering, Volume 76, Issue 5 (May 2006)
Discusses structures made from recycled wastepaper (papercrete). Claims that these are strong, durable and insulating have been made but no research has backed these claims until now.

(For a copy of this article email library@energylibrary.org.nz **Ref 08: Fullder**)

Emissions from distributed vs. centralized generation : The importances of system performance.

Neil Strachan and Alexander Farrell. Energy Policy, Volume 34, Issue 17 (November 2006) Pages 2677-2689

Distributed generation (DG) offers a number of potential benefits, but questions remain about environmental performance. Air emissions from five key DG technologies: gas engines, diesel engines, gas turbines, micro-turbines, and fuel cells, were systematically compared with total energy supply systems based on centralized gas turbines (CCGT) and coal steam turbines plus distributed heating (DH) using gas-fired boilers.

(For a copy of this article email library@energylibrary.org.nz Ref: **08 Strachan**)

The car and fuel of the future

Joseph Romm. Energy Policy, Volume 34, Issue 17 (November 2006) pages 2609-2614

This paper is based on a review of the technical literature on alternative fuel vehicles (AFVs) and discussions with experts in vehicle technology and energy analysis. The urgent need to reverse the business-as-usual growth path in global warming pollution in the next two decades to avoid serious if not catastrophic climate change necessitates action to make our vehicles far less polluting.

(For a copy of this article email library@energylibrary.org.nz Ref: **08 Romm**)

A comparison of fuel consumption between hybrid and intelligent vehicles during urban driving.

C. Manzie and others. Proceedings of the Institution of Mechanical Engineers. Part D Journal of automobile engineering, Volume 220, Issue D1 (January 2006) Pages 67-76.

(For a copy of this article email library@energylibrary.org.nz Ref: **08 Manzie**)

Taxation on vehicle fuels: its impacts on switching to cleaner fuels

Wing-Tat Hung. Energy Policy, volume 34, Issue 16 (November 2006) Pages 2566-2571

Vehicular consumption of fossil fuel contributes over 90% of air pollution in Hong Kong. A key strategy to improve Hong Kong's air quality is to discourage dirty fuels. This paper presents the empirical evidence on the effectiveness of the Government's clean fuel programs that offer tax subsidy to lower the consumption cost of such fuels.

(For a copy of this article email library@energylibrary.org.nz Ref: **08 Hung**)

Preparing for the battle over Phase II : emissions trading.

Jess McCabe. Environmental Finance, Volume 7, Issue 9 (July-August 2006) Pages 22-24

(For a copy of this article email library@energylibrary.org.nz Ref: **08 McCabe**)

Oil and nuclear power: Past, present, and future

Ferenc L.Toth and Hans-Holger Rogner. Energy Economics, Volume 26, Issue 1 (January 2006) pages 1-25

The relationship between oil and nuclear energy in the global energy scene over the past 50 years is analysed. The former nuclear-oil product competition in power generation and various end-use markets is found to have transformed into a complementary relationship.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Toth**)

Nuclear Power and Climate Change: Aspects of the Current Debate.

William Space. The Electricity Journal, Volume 19, Issue 6 (July 2006) Pages 73-86
Formidable political and structural obstacles limit the degree to which concern about carbon emissions has translated into widespread support for new nuclear power plants.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Space**)

Utility Provider Liability for Electrical Failure: Implications for Interdependent Critical Infrastructure

Colleen E. Brown, Stephanie E. Chang and Timothy L. McDaniels. The Electricity Journal, Volume 19, Issue 5 (June 2006) Pages 69-81

As power failures continue to occur and a consistent record of the types of effects experienced by dependent critical infrastructure accumulates, there may be changes in the courts' finding of fact as to what is "reasonably foreseeable." The bar on what constitutes a reasonable level of blackout preparedness and mitigation efforts may be raised.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Brown**)

The productivity and efficiency of the Australian electricity supply industry

Malcolm Abbott. Energy Economics, Volume 28, Issue 4 (July 2006) Pages 444-454
The purpose of this paper is to analyse the changes that have occurred to the Australian electricity supply industry over the past 30 years, in order to evaluate to what degree these reforms have improved the productivity and efficiency performance of the industry

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Abbott**)

Compare and contrast. Rory Sullivan and Jennifer Kozak.

Environmental Finance, Volume 7, Issue 9 (July-August 2006) Pages 36,39.

The electricity sector is at the forefront of efforts to cut greenhouse gas emissions and utilities are generally stepping up their disclosure of climate change risks. But their efforts don't currently meet the needs of investors.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Sullivan**)

Coal combustion products: trash or treasure?

Teresa Hansen. Power Engineering. Volume 110, Issue 7 (July 2006) Pages 58-
Although the by products created during the coal combustion process are not exactly trash, coal-fired power plant owners must find either a viable use for them or a place for their disposal. In many cases, these by products can be used by other industries, making them at least a valuable resource.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08Hansen**)

Improved catalyst can clear the air.

Scot Pritchard. Power Engineering, Volume 110, Issue 5 (May 2006) Pages 42,44,46-47.

Over the past 30 years, emissions technology has vastly improved coal-fired power

plant emissions in terms of their impact on air quality. Now, it can help improve stack emission visibility as well. Although such improvements are primarily visual, their significance is immense.

(For a copy of this article email library@energylibrary.org.nz **Ref: 08Pritchard**)

Energy and economic assessment of IGCC power plants integrated with DME synthesis processes

D Cocco, A Pettinau, and G Cau. Proceedings of the Institution of Mechanical Engineers: Part A : Journal of power and energy. Volume 220, Issue 3 (Mar 2006) Pages 95-

(For a copy of this article email library@energylibrary.org.nz **Ref: 08 Cocco**)

Web resources

BP has launched a [non profit initiative](#) to let UK drivers offset their carbon emissions. Cash collected from the scheme will be invested in renewable power projects.

The UK government has announced it will provide £4.5 million to [a marine energy project](#) that (if consented) will act as a giant extension cable to connect wave energy devices to the national grid.

A [study funded by the U.S. Department of Energy](#) shows a potential application for using high-temperature solar process heat in the production of aluminum.

The Ministry of Economic Development has recently released online 8 reports on energy related topics as part of the [New Zealand Energy Strategy](#) which is due to be released in draft form in early November and ready for public submission.

[New Zealand's Energy Outlook to 2030](#)
[Emerging Supply-Side Energy Technologies](#)
[Heavy Industry Energy Demand](#)
[New Zealand Energy Indicators](#)
[New Zealand Energy Indicators :Supporting Information](#)
[New Zealand Energy Indicators : Scoping Report](#)
[Domain Plan for Energy Sector 2006-2016](#)
[Energy Greenhouse Gas Emissions 1990 - 2005](#)

Apart from the three yearly produced New Zealand's Energy Outlook and the annual Energy Greenhouse Gas Emissions most of the other reports have been written by consultants

August Competition

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 Sept 8th)

A song was written in 1973 about the building of a New Zealand dam.
Who sang this song,
What was the title
and who was the prime minister at that time.