

Energy Library Update

July 2007

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The Energy Library team

New Books and Standards

How to live a low-carbon life: the individuals guide to stopping climate change.

(2007) C. Goodall. London: Sterling

A practical account of how the individual can significantly reduce their contribution to climate change. Find out how to calculate your CO2 emissions and reduce them to a sustainable 3 tonnes a year. I'd write more, but I can't put it down!

(To borrow this book email library@energylibrary.org.nz Ref: **07Goodall**)

AS 4777. 2005. Grid connection of energy systems via inverters. Part 1: Installation requirements.

(To borrow this standard email library@energylibrary.org.nz Ref: **07-4777.1**)

AS 4777. 2005. Grid connection of energy systems via inverters. Part 2: Inverter requirements .

(To borrow this standard email library@energylibrary.org.nz Ref: **07-4777.2**)

AS 4777. 2005. Grid connection of energy systems via inverters. Part 3: Grid protection requirements.

(To borrow this standard email library@energylibrary.org.nz Ref: **07-4777.3**)

AS/NZS 2535.1: 2007. Test methods for solar collectors. Part 1: Thermal performance of glazed liquid heating collectors including pressure drop (ISO 9806-1:1994) 2nd Rev. Ed. Reproduced with modifications from ISO 9806:1994
(To borrow this standard email library@energylibrary.org.nz Ref: **07-2535.1**)

The NZ Infrastructure, Water and Environment Directory. (2007 - 15th ed.) Wellington: New Zealand Water and Wastes Association (NZWAA). This can be searched [online](#).
(To borrow the hard copy of this directory email library@energylibrary.org.nz Ref: **07NZWAA**)

Special Journal Issue

Nuclear Rising (*IEEE Power & Energy magazine* Nov/Dec 2006)

This issue contains 5 feature articles on nuclear power, which is on the verge of experiencing a renaissance in the United States.

(To borrow this whole issue email kmcara@energylibrary.org.nz Ref: **07Nuclear**)

New Management, Marketing and H&S Articles

Corporate spying (cover story). Lawrence, Kevin. *New Zealand Management*; Jul 2007, Vol. 54 (6), p28-35

The article examines the conflict between profits and business ethics in New Zealand. Information on the decision of Solid Energy to pay spies to report on the international operations of its enemy Save Happy Valley Coalition is presented. Details of the allegations against Mercury Energy concerning the death of Folole Muliaga are outlined.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Kevin**)

Strategies to crack: Well-guarded markets. Bryce, David J. and Dyer, Jeffrey H. *Harvard Business Review* Vol. 85 (5), May 2007 p84-92

How can companies break into attractive markets, where incumbents erect many barriers to entry? When the authors dissected the strategies that worked best, one common theme stood out: indirect assault.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Bryce**)

Confer among yourselves. Young, Simon. *NZ Marketing Magazine*; Jun 2007, Vol. 26 Issue 5, p42-49

What makes a conference effective and memorable?

(For a copy of this article email library@energylibrary.org.nz Ref: **07Young**)

Procuring service innovations: Contractor selection for partnering projects. Anna Kadefors and others. *International Journal of Project Management* Volume 25, Issue 4, (May 2007) p375-385

The aim of this study is to show how procurement practice is influenced by goals of innovation and collaboration, and to discuss implications for the spreading of new practice in this area.

The study is based on a review of public clients' bid documents from Swedish partnering projects as well as on interviews with the clients.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Anna**)

How successful leaders think. (cover story) Martin, Roger. *Harvard Business Review*; Vol. 85 Issue 6, Jun2007 p60-67

In search of lessons to apply in our own careers, we often try to emulate what effective leaders do. Roger Martin says this focus is misplaced, because moves that work in one context may make little sense in another. A more productive approach is to look at how such leaders think.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Martin**)

What causes accidents? Gibb, A. and others. *Proceedings of the Institution of Civil Engineers: Civil Engineering* 159 (2 SPEC. ISS.); 2006, p. 46-50

Based on the findings of a three-year research project funded by the UK Health and Safety Executive. The project developed a causality model, using an ergonomics systems approach, to identify where safety is compromised and why.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Gibb**)

New Energy Articles

Power performance. Chamberlain, Jenny. *North & South*; Jul 2006 Issue 244, p92-101.

An article about how New Zealand power company TrustPower operates.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Jenny**)

Turning clean green into black gold. Helm, Nick. *E.NZ magazine*; May/June 2007 Volume 8/3 p.10-14

Biofuels are well and truly in the political and media spotlight, but can they meet expectations? The author finds out what technologies are being developed in New Zealand, and whether we have the know-how and resources to achieve the Government's biofuels obligation.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Helm**)

Support for renewable energy will level the playing field. Rainer Hinrichs-Rahlwes. In: *Renewable Energy* 2006 (p39-43,45). London: Sovereign.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Rainer**)

Electricity company managers' views of environmental issues: Implications for environmental groups and government. Maya E. Fischhoff. *Energy Policy* Volume 35, Issue 7 (July 2007) p.3868-3878

This paper is based on in-depth interviews with 70 middle managers in two electricity companies heavily reliant on coal. It finds managers sincerely committed to environmental action, but often frustrated by confusing regulatory requirements, perceived costs, and other challenges. It identifies ways of enabling middle managers to act on their commitment, with lessons relevant for outside groups and those within companies seeking to effect change.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Maya**)

Addicted to oil. DiPeso, Jim. *Environmental Quality Management*; Summer 2006, Vol. 15 Issue 4, p93-100

Why is our dependency on oil problematic and what can be done to reduce this dependency? This article discusses engineering developments in the U.S. that help to answer the latter part of this question.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Jim**)

Carbon offsets 101. Anja Kollmuss. *World Watch*; Jul/Aug 2007. Vol 20 (4) p9-14

It has become fashionable to purchase carbon offsets to attain partial or complete carbon neutrality. But some offset projects may be contributing to the problem rather than helping. This article presents the issues that surround various projects and concludes that thoughtful design of carbon offset projects is crucial.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Anja**)

If you are interested in the above article you may also like to read:

"Biofuels: Biodevastation, hunger and false carbon credits" (available [online](#)) and

"A consumers' guide to retail carbon offset providers" (available [online](#)).

Climate change vulnerabilities and responses in a developing country city: Lessons from Cochin, India. Thomas J. Wilbanks and others. *Environment*; Jun 2007. Vol. 49, Iss. 5, p.23-33

(For a copy of this article email library@energylibrary.org.nz Ref: **07Thomas**)

Scottish sea monsters ride the crest of a wave. *Modern Power Systems*; Vol. 27 Issue 5, May 2007, p35-38, 3p

The government of Scotland has injected £13 million into the development of wave energy technology....

(For a copy of this article email library@energylibrary.org.nz Ref: **07MPS**)

Cost-effective large tidal plants could secure peak power in 15 countries.

F. Lemperiere and P. Blanc. *International Journal on Hydropower & Dams*; Issue 3, 2007 p.130-138

(For a copy of this article email library@energylibrary.org.nz Ref: **07Blanc**)

The future of nuclear power in Europe: a response. Geoff O'Brien and Phil O'Keefe. *International Journal of Environmental Studies*; Apr 2006, Vol. 63 Issue 2, p121-130

(For a copy of this article email library@energylibrary.org.nz Ref: **07Obrien**)

Green appliances come in several shades. Austin Weber. *Assembly*; Jun 2007. Vol. 50 (6), p.28-30,32,34-36,38-40 (10 pgs.)

Spurred on by energy and environmental policies, consumer expectations and the need to reduce costs, manufacturers are increasingly focused on producing greener appliances. Green can mean a variety of things including improvements in energy efficiency, reduced water consumption and the utilisation of recyclable materials.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Weber**)

Approaches for sustainable manufacturing. Gunther, S. and others. *Chinese Journal of Mechanical Engineering (English Edition)*; 20 (1) 2007, p. 86-90
(For a copy of this article email library@energylibrary.org.nz Ref: **07Gunther**)

Can labs go green? Bob Grant. *The Scientist*; Jun 2007. Vol. 21 (6), p.27-32
Research facilities can benefit hugely from implementing sustainable practices. Labs are notorious for their high energy use so improvements in this area can save them significant amounts of money. Improved building design can also have a beneficial impact on employees, who will often be more comfortable and more productive. Technologically advanced air conditioning (e.g. low velocity swirl diffusers), exploitation of natural lighting and use of recycled building materials are features of several laboratories in the States which are held up as examples of what can be achieved.
(For a copy of this article email library@energylibrary.org.nz Ref: **07Grant**)

What oil export levels should we expect from OPEC? Gately, Dermot. *Energy Journal*; Vol. 28 Issue 2, 2007 p151-173
(For a copy of this article email library@energylibrary.org.nz Ref: **07Gately**)

Cap and trade and more? Michael Northrop and David Sassoon. *Environmental Finance*; Jun 2007 Volume 8, Number 8 p.20, 22-23
The U.S. must do more than embrace cap and trade to tackle climate change.
(For a copy of this article email library@energylibrary.org.nz Ref: **07Sassoon**)

Exhaust ventilation energy saving in car manufacturing and other industries. Ales Litomisky. *Energy Engineering*; Vol 104, (3) 2007. p.54-66,68-80
(For a copy of this article email library@energylibrary.org.nz Ref: **07Ales**)

Engineering and construction projects for oil and gas processing facilities: Contracting, uncertainty and the economics of information. Kees Berends. *Energy Policy*; Volume 35, Issue 8, (August 2007) p.4260-4270
(For a copy of this article email library@energylibrary.org.nz Ref: **07Kees**)

Contractors' perceptions of construction risks: A case study of power station projects in Egypt. *Cost Engineering*; May 2007, Vol. 49 Issue 5, p25-34
(For a copy of this article email library@energylibrary.org.nz Ref: **07Cost**)

Hydroelectric power without water storage. T.L. Shaw, *Institution of Civil Engineers - Proceedings: Engineering Sustainability*; Volume: 159 (4) December 2006. p.139 - 143
Although reservoirs benefit the performance of hydropower schemes there is no overriding operational need for them. Wind and solar power projects function well without storage, as will the planned range of marine energy devices. This paper reviews the equivalent features of 'run-of-river' hydro schemes which in essence operate in response to rainfall, that is, according to the variation of river flow resulting from the natural release of water from catchments.
(For a copy of this article email library@energylibrary.org.nz Ref: **07Shaw**)

Turbine upgrade with computational fluid dynamics: A New Zealand perspective. Ian A. Lees and Rik J. Hothersall. *HRW*; September 2006 p.20-22,24
(For a copy of this article email library@energylibrary.org.nz Ref: **07Lees**)

Jet aircraft – is a viable alternative to kerosene available? Chris Smith. *Energy World*; March 2007 p.13-15
(For a copy of this article email library@energylibrary.org.nz Ref: **07Smith**)

A new alternative fuel for reduction of polycyclic aromatic hydrocarbon and particulate matter emissions from diesel engines. Chung-Shin Yuan and others. *Journal of the Air & Waste Management Association*. Apr 2007 Vol. 57 (4); p465, 7 pgs
(For a copy of this article email library@energylibrary.org.nz Ref: **07Yuan**)

Covered storage rises to bulk challenges. [No author cited] *CoalTrans International*; Vol 22 (2) March/April 2007 p.26,28-29
(For a copy of this article email library@energylibrary.org.nz Ref: **07Coal**)

The summer of 2006: A milestone in the ongoing maturation of demand response. Nicole Hopper and others. *The Electricity Journal*; Vol 20 (5) (June 2007) p.62-75
How did DR programs perform in 2006? For reliability programs, the resounding answer from industry participants was "very well." However, the performance of economic DR programs and dynamic pricing tariffs received less glowing reports.
(For a copy of this article email library@energylibrary.org.nz Ref: **07Hopper**)

Electric arc hazard; Understanding assessment and mitigation. H. Landis Floyd II and Daniel R. Doan. *Professional Safety*; Vol 52 (1) Jan 2007, p.18-23
(For a copy of this article email library@energylibrary.org.nz Ref: **07Doan**)

A deep geothermal exploration well at Eastgate, Weardale, UK: a novel exploration concept for low-enthalpy resources. D. A. C. Manning. *Journal of the Geological Society*; Mar 2007. Vol. 164, Part 2 p. 371-382
(For a copy of this article email library@energylibrary.org.nz Ref: **07Manning**)

Load-based models for intra-day electricity pricing. *Energy Risk*; Vol. 4 (8) June 2007 p.57-63
(For a copy of this article email library@energylibrary.org.nz Ref: **07Load**)

Harnessing advanced metering for Kyoto compliance. Jeffrey Michel. *Metering International*; Issue 4 2006 p.56-58
(For a copy of this article email library@energylibrary.org.nz Ref: **07Michel**)

Back to being a model of stability. *Windpower Monthly*; Jan 2007 Vol. 23 (1)

Wind power generation costs stabilised last year after their unprecedented leap upwards in 2005. Gas prices dropped slightly, while coal remained the cheapest option, though on a rising trajectory. Nuclear is still anybody's guess. Our annual costs analysis shows that wind plant on good sites with long term power purchase contracts continue to be highly competitive, even when the cost of carbon pollution permits is kept artificially low.

(For a copy of this article email library@energylibrary.org.nz Ref: **07WPM**)

Economical efficiency of coordinating the generation by subsystems with the capacity of transmission in the Brazilian market of electricity. Lucio Guido Tapia Carpio and Jr., Amaro Olimpio Pereira. *Energy Economics* Volume 29, Issue 3 (May 2007) p454-466

This paper describes a competitive approach to electric power generation in Brazil. The decision-making process is modeled on Nash-Cournot equilibrium, wherein players (subsystems) make simultaneous decisions in relation to the quantities to be produced. The objective is to present a model in which each subsystem independently manages its operations, thus creating conditions for each region to develop according to its own peculiarity.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Tapia**)

Spotlight on transformer design. Georgilakis, P.S., Amoiralis, E.I. *IEEE Power and Energy Magazine*; 5 (1), 2007 p. 40-50

This article discusses design optimisation of electric transformers which leads to improvements in efficiency and reduces costs.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Transformer**)

Low-temperature heat storage for solar heating and cooling applications.

Christian Schweigler and others. *ASHRAE Transactions*; Vol 113, Part 1, 2007 p.89-96

(For a copy of this article email library@energylibrary.org.nz Ref: **07Christian**)

Blowing in the wind - the future of electricity generation in New Zealand. Kevin Kevany. *Electrical + Automation Technology*; Feb/Mar 2007. Available [online](#).

Green light. *Commercial Design Trends*; volume 2304. This article describes Wellington's Conservation House as an "environmentally pro-active building". Available [online](#). You might also be interested in this recent MFE report: [Sustainable government buildings](#).

What now? (cover story). Kluger, Jeffrey and others. *Time South Pacific*; 09/04/2007 Issue 13, p34-45. An article on the general issues around global warming. Available [online](#).

Customer service in the spotlight. Krell, Eric. *Electric Perspectives*; Mar/Apr 2006, Vol. 31 Issue 2, p30-43. This article is available [online](#).

Flywheel technology. Rackow, Gary. *Broadcast Engineering*; May 2007, Vol. 49 (5), p86-91 This article is available [online](#).

Featured Topic

Weather-related blackouts: Samplings from our collection and the Web.

Power systems in emergencies: From contingency planning to crisis management.

(2001) Knight, U.G. Chichester: John Wiley & Sons

(To borrow this book email library@energylibrary.org.nz Ref: **07Knight**)

The May storm blackout: Inquiry report. (1994) Taylor, K.J. Perth: Ministry for Resources Development and Energy

300,000 customers were without power for 24 hours following a 17 hour storm in Perth which caused massive damage to SECWA's entire distribution network. The reactions of SECWA, the other commonwealth and state agencies involved and the public are examined. Procedural recommendations are given for the management of similar scale emergencies and preventative measures for the management of future emergencies are discussed.

(To borrow this report email library@energylibrary.org.nz Ref: **07Taylor**)

Storm modeling for prediction of power distribution system outages. Dan Zhu and others. *Electric Power Systems Research*; Volume 77, Issue 8, June 2007, Pages 973-979

This paper proposes a two-stage prediction method to forecast storm related outages. Historical outage and weather data are employed to create empirical models for different types of storms. Observers are employed for tracking storm outages in real time.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Zhu**)

KUA weathers storm outage management--and weathers it well. Davis, Kathleen. *Paperboard Packaging*; Mar 2007, Vol. 92 Issue 2, p34-39

The author interviews Ken Davis of the Kissimmee Utility Authority (KUA) about the company's comprehensive management plan for disaster-related electric power outages.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Davis**)

Guidelines for emergency resource planning for overhead transmission line asset owners. Report - SC B2, WG B2.13. *Electra*; 222 (October 2005), p.31-40

Effective emergency response planning requires senior management leadership to implement a clearly stated corporate policy. Planning teams identify threats, assess risks, develop detailed response plans and structure the emergency response organization. Planning covers all aspects of recovery: management organization, material, equipment, logistics, manpower and communications. Training programs and post event evaluations essential.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Emergency**)

Current practices regarding frequencies and magnitude of high intensity winds.

Technical Brochure No. 256, WG B2.16. *Electra*; 216 (October 2004), p.29-39

This paper introduces the corresponding technical brochure. It focuses on the description of extreme meteorological events and provides their main characteristics. A review of the overhead lines design rules is given.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Winds**)

Survey of electrical and mechanical failures of insulators caused by ice and/or snow.

Report - SC B2, WG B2.03. *Electra*; 222 (October 2005), p.22-26

WG B2.03 conducted a worldwide survey to evaluate the electrical and mechanical performance of insulators under ice and snow service conditions. Although the number of replies was not large, the types of problems described by this survey are thought to be representative. For most electrical disturbances, the insulators kept their insulator function. There were few mechanical failures but the impact of mechanical failures on the power system is significantly more serious than that of electrical disturbances.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Snow**)

Negative binomial regression of electric power outages in hurricanes. Liu, Haibin and others. *Journal of Infrastructure Systems*; 2005 Vol. 11 (4) p.258-267

Currently, power companies are unable to accurately predict where outages will occur. Therefore, it is difficult for them to deploy repair personnel and materials, and make other emergency response decisions in advance of an event. This paper describes negative binomial regression models for the number of hurricane-related outages likely to occur in each one square kilometer grid cell and in each zip code in a region due to passage of a hurricane.

(For a copy of this article email library@energylibrary.org.nz Ref: **07Liu**)

Miscellaneous online articles:

- [The calm after the storm](#) (*ABB Review*)
- [Outage management systems key to quick response](#) (*Electric Light & Power*)
- [Automated systems for disaster response: Three case studies](#) (*Geospatial Solutions*)
- [Glazed over: Canada copes with the ice storm of 1998](#) (*Environment*)
- [Trouble call management: The first step in outage response](#) (*Utility Automation & Engineering T&D*)
- [Extreme winds test wood pole strength](#) (*Transmission & Distribution World*)
- [Effective and efficient outage response](#) (*Transmission & Distribution World*)
- [White knights of the South](#) (NZ article from *Electrical + Automation Technology*)

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Oldies and Goodies from the Energy Library collection

Electricity distribution as an unsustainable natural monopoly: a potential outcome of New Zealand's regulatory regime. Calum Gunn and Basil Sharp. *Energy Economics*; Volume 21, Issue 4, 1 August 1999, p.385-401

(For a copy of this article email library@energylibrary.org.nz Ref: **07Gunn**)

Workplace stress in New Zealand. (2003) Scott-Howman, Andrew and Walls, Chris
Wellington: Thomson Brookers

An authoritative book on workplace stress. Written by a lawyer with experience in accident compensation legislation, and a specialist occupational physician. Covers the legal and medical aspects of workplace stress, and includes a list of relevant legislation and a table of cases.
(To borrow this book email library@energylibrary.org.nz Ref: **07Walls**)

CLASP: The Lesson Learned in Asia: Regional Symposium on Energy Efficiency Standards and Labelling: 29-31 May 2001

(To borrow this CD-ROM email library@energylibrary.org.nz Ref: **07CLASP**)

Energy on the Web

New Zealand

Prospects for deployment of CCS (EFNZ-CANZ Seminar June 2007) – [presentation notes](#)

EECA's latest Statement of Intent - [report](#)

Northland's mineral potential remains largely untapped - [report](#)

A convenient untruth: Towards a lighter agricultural footprint - [report](#)

Ecobob - Green building information [website](#)

Useful NZ Newsletters:

- **Sustain** - NZ Business Council for Sustainable Development [newsletter](#)
- **Pipes & Wires** - Utility Consultants [newsletter](#)

Managing the risk of power shortfalls – This article is in the [July 2007 issue](#) of ISCR's Competition and Regulation Times.

International

First Carbon Management MBA launched – [press release](#)

One in five households choose an innovative energy deal – [press release](#)

Wind, fire and water: Birds and renewable energy – [conference papers](#)

Review of Distributed Generation – [DTI report](#)

Scheme to reward microgenerators exporting excess electricity - [DTI report](#)

How to design a zero carbon office – [DTI report](#)

Freeing the grid: How effective state net metering laws can revolutionize U.S. energy policy - [report](#)

Reflections on the Stern Review (1): A robust case for strong action to reduce the risks of climate change - [paper](#). This is just one of the additional papers available [here](#)

Action plan for energy efficiency: Realising the potential - Commission of the European Communities [communication](#)

Committee of inquiry into financial hardship: Issues paper for consultation with stakeholders – Australian [issues paper](#) for the Victorian Government

Switching rates for vulnerable customers – [Ofgem summary report](#)

Food for Thought

Did you know that in 2006 Texas overtook California as the US State with the most installed wind capacity? Read more [here](#) and to be in to win a king-size bar of energy chocolate [email Kat McAra](#) with the answer to this question: What does the acronym CREZ stand for? (The answer can be found in the article).

Draw closes 4pm Friday 10th August 2007.

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