

Energy Update

July 2011

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Kat McAra, Current Awareness Advisor

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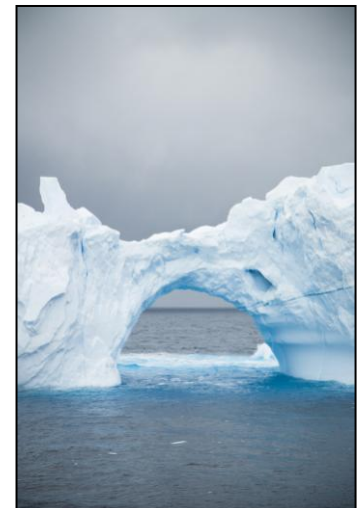
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New Items for Loan

Climate change law and policy in New Zealand. Cameron, Alastair (editor). Wellington: Lexis Nexis, 2011

This text is written by legal practitioners, academics, economists and other scientists in the climate change field. It covers the NZ ETS and other regulatory initiatives in detail.

(To borrow this item email library@energylibrary.org.nz Ref: **0711-Loan1**)

NEC managing reality: Book 3: Managing the contract. Mitchell, Bronwyn; Trebes, Barry. 3rd ed. London: Thomas Telford Publishing, 2005

Both first time and experienced practitioners will benefit from this publication. Examples of chapter headings include: Payment procedure for the ECC; Control of Time; Control of Quality; Disputes and Dispute Resolution.

(To borrow this item email library@energylibrary.org.nz Ref: **0711-Loan2**)

Safety through design. Christensen, Wayne C.; Manuele, Fred A. (editors). 3rd ed. Itasca: National Safety Council, 1999

Divided into three parts: Introducing safety through design; Integration into business processes; Safety through design in industry

(To borrow this item email library@energylibrary.org.nz Ref: **0711-Loan3**)

Wilful blindness: Why we ignore the obvious at our peril. Heffernan, Margaret. New York: Walker, 2011

Examples of chapter headings from this intriguing book include: Dangerous convictions; The limits of your mind; Just following orders; De-moralizing work; See better.

(To borrow this item email library@energylibrary.org.nz Ref: **0711-Loan4**)

Special Journal Issues

Hydro and Dams in Switzerland. The Vol. 18 (3) 2011 issue of *International Journal on Hydropower & Dams* contains 10 articles on dams and hydropower in Switzerland, including:

1. Challenges experienced at the Nant de Drance pumped-storage plant
2. Continuous dam monitoring: an essential basis for reliable back-analysis
3. Innovative approaches to sediment management
4. Monitoring of steel-lined pressure shafts and tunnels

(To borrow this whole journal issue email library@energylibrary.org.nz Ref: **0711-Loan5**)

Dam safety and modelling. The Feb 2011 issue of *International Water Power & Dam Construction* includes 5 articles on dam safety and modelling, including historical seismic actions.

(To borrow this whole journal issue email library@energylibrary.org.nz Ref: **0711-Loan6**)

Managing yourself. The Jan 2005 issue of *Harvard Business Review* contained some great articles on this topic, including:

1. Almost ready: How leaders move up
2. Overloaded circuits: Why smart people underperform
3. How to play to your strengths
4. Do your commitments match your convictions?
5. The best advice I ever got
6. Managing your boss

(To borrow this whole journal issue email library@energylibrary.org.nz Ref: **0711-Loan7**)

In the wake of the quake: Nuclear, engineering and supply chain lessons from Japan.

The May 2011 issue of *Risk Management* contains 5 short articles, including:

1. Building code lessons
2. The preparedness imperative
3. A supply chain unlinked

These articles are available [online](#) or you can borrow our printed copy.

(To borrow this whole journal issue email library@energylibrary.org.nz Ref: **0711-Loan8**)

New Management, Marketing and HR Articles

The new psychology of strategic leadership. Gavetti, Giovanni. *Harvard Business Review*; Jul/Aug 2011, Vol. 89 (7/8), p.118-125

Firms in an industry typically cluster around a few strategic positions, and the intense competition on those occupied "mountaintops" makes it hard for firms to gain attractive returns. Superior opportunities lie on unoccupied mountaintops. Yet because those opportunities are "cognitively distant"-far from the status quo- strategists have trouble recognizing and acting on them. Competition, therefore, is weak. Most managers are trained to analyze economic forces when they want to identify new opportunities. But that approach usually won't uncover the kinds of ideas that overturn the status quo. Recent research on human cognition suggests that leaders would do better to use associative thinking to spot, act on, and legitimize distant opportunities. They should learn to make analogies with businesses in other industries, for example. For example, Charles Merrill launched an extraordinarily successful business when he reimagined banking as a "financial supermarket." This article explores ways to jump-start associational thinking- and to bring stakeholders along on the journey.

(To request: email library@energylibrary.org.nz Ref: **0711-Lead**)

The art of negotiation. Clothier, Neil. *Training Journal*; May 2011, p.47-51

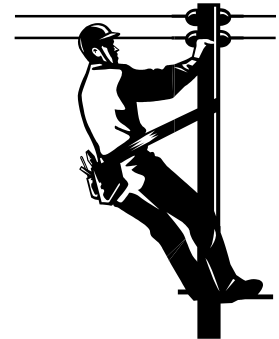
(To request: email library@energylibrary.org.nz Ref: **0711-Negotiation**)

Work force planning the systems way. S. Jarugumilli; Grasman, S. E. *Industrial Engineer: IE*; Jul 2011, Vol. 43 (7), p.35-39

(To request: email library@energylibrary.org.nz Ref: **0711-Work**)

What to do with the workforce in a down economy. Kamph, Brad. *Natural Gas & Electricity*; Mar 2009, Vol. 25 (8), p.23-27

(To request: email library@energylibrary.org.nz Ref: **0711-Economy**)



Selecting infrastructure delivery modalities: No time for ideology or semantics. Vives, Antonio et al. *Journal of Construction Engineering & Management*; Apr 2010, Vol. 136 (4), p.412-418

Developing and developed countries need to increase their investments in infrastructure to support economic growth, productivity, and the competitiveness of their economies to enhance the well being of their populations. Some of these investments, being long term, illiquid and considered public services, tend to be undertaken by the public sector. Nevertheless, in some sectors and at different points in history, there has been considerable participation by the private sector. For the purposes of enhancing these investments, all possible options of private and public participation must be considered and the needs are such that ideology and semantics should not get in the way. From the very extensive experience in developing countries, it has been learned that selecting the proper modalities can enhance the long term viability of the investments, can increase the number of bankable projects, attract investments and reduce backlash from failures. These lessons can be applied to developed countries as well. This paper presents a model for the selection of the most suitable service delivery modalities adapted to the prevailing local conditions of the country.

(To request: email library@energylibrary.org.nz Ref: **0711-Select**)

Free cash flow models, terminal values and the timing of asset replacements. Lally, Martin. *New Zealand Economic Papers*; 01/06/2008, Vol. 42 (1), p.79-102

This paper analyses the issue of the timing of expenditures in replacing fixed assets within the context of valuing firms using the free cash flow approach. Standard practice amongst both practitioners and academics is to assume a smooth pattern in these expenditures past some future point, and such a pattern is improbable. This paper develops a model that rests upon much less restrictive assumptions, shows that the model is readily amenable to implementation, and that the difference in valuation results could be quite substantial.

(To request: email library@energylibrary.org.nz Ref: **0711-Cash**)

Proof's in the pudding. McPhun, H. *Employment Today*; Jun 2011 (156), p.28-31

Discusses the importance of conducting a learning needs analysis when planning staff training.

(To request: email library@energylibrary.org.nz Ref: **0711-Training**)

The right way to pay an office a visit. Pollock, Ted. *Supervision*; May 2011, Vol. 72 (5), p.17-20

(To request: email library@energylibrary.org.nz Ref: **0711-Visit**)

The emergence of CSR as an advertising topic: A longitudinal study of German CSR advertisements. Mogeles, B.; Tropp, J. *Journal of Marketing Communications*; Jul 2010, Vol. 16 (3), p163-181

In recent years, the concept of Corporate Social Responsibility (CSR) is gaining in relevance. The analyses available on this issue take predominantly a direct reference to the normative and strategic management level. However, until now hardly any analyses have been available on CSR as a result of companies' operative marketing communications management. The research presented is based on this interest. It is exploring by means of content analysis the developments in advertising that have taken place in the CSR-communication offers with respect to quantity and content during the years 2002-7. The objects of investigation are the weekly German magazines *Der Spiegel*, *Focus* and *WirtschaftsWoche*. The findings show that the share of CSR print advertisements has increased significantly (+390%) and that the companies' will to take over social responsibility has been established within their advertising topic mix. The companies are linking increasingly their ecological and/or social commitment with product advertising having the effect that the economic component of the triple-bottom-line is gaining in relevance. Hence, these developments suggest that on a normative and strategic management level the concept of an ethical economy is further emerging. The companies get confronted with an increasing public communication pressure in the CSR area.

(To request: email library@energylibrary.org.nz Ref: **0711-CSR**)

Firm reputation, recruitment web sites, and attracting applicants. Williamson, Ian O. et al. *Human Resource Management*; Jul/Aug 2010, Vol. 49 (4), p.669-687

(To request: email library@energylibrary.org.nz Ref: **0711-Recruit**)

The "power" of social media: legal issues & best practices for utilities engaging social media. This 2011 *Energy Law Journal*; article is available [online](#).

Construction hoists: Understanding exposures & controls. S. Rajendran; B. Clarke. *Professional Safety*; Jul 2011, Vol. 56 (7), p.28-34
(To request: email library@energylibrary.org.nz Ref: **0711-Safety**)

Shared human capital in project management: A systematic review of the literature. Suhonen, M.; Paasivaara, L. *Project Management Journal*; Mar 2011, Vol. 42 (2), p.4-16
(To request: email library@energylibrary.org.nz Ref: **0711-Project**)

New Energy Articles and Environment Articles

Transmission Tomorrow. Matt Philp. *Engineering Insight*; Vol. 12 (4) Jul/Aug 2011, p.24-27
The history of attempts to forecast our future electricity needs isn't exactly strewn with examples of seer-like vision. Even as recently as the 1990s we were pulling transmission lines out of Canterbury, which is now at the heart of a dairy boom, using unprecedented amounts of power. Return to the planning documents of the early 1970s, by contrast, and you'll see serious consideration given to New Zealand going nuclear to meet predictions of wildly spiralling demand. Such cautionary tales have informed the latest effort, a Transpower policy document that sets out how the grid will be managed over the next 20 years and beyond. Two years in the making, Transmission Tomorrow eschews bold one-shot prophecies in favour of a more balanced consideration of possible developments in the generation and use of power.
(To request: email library@energylibrary.org.nz Ref: **0711-Transpower**)

Here we go again. Titchall, A. *Energy NZ*; Vol. 5 (2), Mar/Apr 2011, p.38-39
Is a mixed ownership model the right commercial move for the future of the country's generation or old and redundant ideological rope to hang ourselves even further?
(To request: email library@energylibrary.org.nz Ref: **0711-Privatise**)



The long term development of New Zealand's electricity supply industry. Abbott, Malcolm. *New Zealand Economic Papers*; 01/04/2010, Vol. 44 (1), p.75-89
(To request: email library@energylibrary.org.nz Ref: **0711-Supply**)

Utility regulation: The scope and structure of electrical safety regulation. Malcolm Abbott; Bruce Cohen. *Energy Policy*; Vol. 39 (9), Sept 2011, p.4956-4961
The purpose of this paper is to discuss the major issues that have arisen in the creation of regulatory agencies responsible for electrical safety standards in Australia and New Zealand, and how they have impacted on liberalised electricity markets.
(To request: email library@energylibrary.org.nz Ref: **0711-Regulation**)

The world needs a new energy paradigm. Dick Hedberg et al. *Ambio: Special Report: Energy 2050 Stockholm*; Jul 2010, Vol. 39 p.1-10
(To request: email library@energylibrary.org.nz Ref: **0711-World**)

A practical, affordable (and least business risk) plan to achieve '80% clean electricity' by 2035. Craig A. Severance. *The Electricity Journal*; Vol. 24 (6), Jul 2011, p.8-26
As the world's largest free economies move towards a dramatically new future for their power industries, what challenges face electric utilities? Will it be feasible to achieve President Barack Obama's goal of 80% Clean Electricity by 2035? How might electric utilities proceed with the least business risk?

(To request: email library@energylibrary.org.nz Ref: **0711-Clean**)

Powerswitch. Wendelborn, Marc. *Consumer*; Jun 2011 (514), p.11-13
How to save money on your power bill.

(To request: email library@energylibrary.org.nz Ref: **0711-Switch**)

Predicting fuel poverty at a small-area level in England. Eldin Fahmy et al. *Energy Policy*; Vol. 39, (7), July 2011, p.4370-4377

(To request: email library@energylibrary.org.nz Ref: **0711-Poverty**)

Emitting diodes in traffic lights: A case study of Gloucestershire County's initiative.

Sabapathy, A.; Whittaker, J. *Energy & Environment*, 2011, Vol. 22 (4), p.361-374

Gloucestershire County Council (GCC) in the United Kingdom has recently initiated a project to replace all of its halogen lamps in traffic lights with low energy Light Emitting Diode (LED) lamp heads across the County. In order to assess energy savings and carbon reductions from the initiative before implementation, baseline energy monitoring was carried out at 45 sample sites using a power analyzer equipped with a data logger. A regression model to predict annual energy consumption was developed with the numbers of each type of lamp head for each junction as independent variables. The model parameters were then used to estimate baseline emissions for a single trial site where LEDs have been installed and for which energy monitoring was carried out. The estimated baseline energy consumption for this site and the monitored energy consumption after the LEDs have been installed were used to estimate the actual energy savings that can be expected from GCC's initiative. Annual energy savings from this analysis were estimated to range from 64.2 to 74.1 percent (95% Confidence Intervals). The cost savings resulting from the LED initiative were found to payback the investment over a period of about six years. This paper presents a low cost approach and method by which the energy and cost savings of a large scale replacement initiative can be estimated with a single pilot replacement installation of a traffic signal. Such an exercise would be useful for local governments to carry out before making large investment decisions.

(To request: email library@energylibrary.org.nz Ref: **0711-LED**)

Energy analysis of irrigation delivery systems: Monitoring and evaluation of proposed measures for improving energy efficiency. M. A. Moreno et al. *Irrigation Science*; Jul 2010, Vol. 28 (5), p.445-460

(To request: email library@energylibrary.org.nz Ref: **0711-Irrigation**)

Energy management opportunities and challenges for the healthcare industry. Smith, Richard. *HFM (Healthcare Financial Management)*; Apr 2011, Vol. 65 (4), p.98-102

(To request: email library@energylibrary.org.nz Ref: **0711-Health**)

Assessing embodied energy of building structural elements. L. Vukotic et al. Symons *Proceedings of the ICE - Engineering Sustainability*; Vol. 163 (3), Sept 2010, p. 147-158
(To request: email library@energylibrary.org.nz Ref: **0711-Embodied**)

Determinants of green electricity adoption among residential customers in Germany. Gerpott, T. J.; Mahmudova, I. *International Journal of Consumer Studies*; Jul 2010, Vol. 34 (4), p.464-473
(To request: email library@energylibrary.org.nz Ref: **0711-Green**)



Energy saving and thermal comfort studies of a regional air-conditioning mechanism. K. D. Huang et al. *Proceedings of the Institution of Mechanical Engineers: Part A. Journal of Power and Energy* 2010, Vol. 224 (A1), p.13-22
(To request: email library@energylibrary.org.nz Ref: **0711-Saving**)

An agent-based model to study market penetration of plug-in hybrid electric vehicles. Margaret J. Eppstein et al. *Energy Policy*; Vol. 39 (6), Jun 2011, p.3789-3802
(To request: email library@energylibrary.org.nz Ref: **0711-PHEV**)

Assistive tools for system integration, deployment, monitoring, and maintenance of ocean energy devices. E. Omerdic et al. *Proceedings of the Institution of Mechanical Engineers: Part M: Journal of Engineering for the Maritime Environment*; 2010. Vol. 224 (M3), p.155-172
(To request: email library@energylibrary.org.nz Ref: **0711-Ocean**)

An evaluation of R134A and R245FA as the working fluid in an organic Rankine cycle energized from a low temperature geothermal energy source. Masheiti, S. et al. *Journal of Energy & Power Engineering*; May 2011, Vol. 5 (5), p.392-402
(To request: email library@energylibrary.org.nz Ref: **0711-Geothermal**)

Application of geothermal heat pumps in a renovated campus building. Jae-Han Lim. *International Journal of Energy Research*; Apr 2010, Vol. 34 (5), p.445-453
(To request: email library@energylibrary.org.nz Ref: **0711-Heat**)

Factor demand and price sensitivity of forest-based biomass in the European energy and forest sectors. Lundmark, Robert. *Journal of Natural Resources Policy Research*; Jul 2009, Vol. 1 (3), p.229-239
(To request: email library@energylibrary.org.nz Ref: **0711-Biomass**)

The greening of Drax and the economic realities. *Modern Power Systems*; Aug 2010, Vol. 30 (8), p.16-19
Previously a coal firing facility, Great Britain's Drax power station now burns biomass. This article discusses the challenges involved.
(To request: email library@energylibrary.org.nz Ref: **0711-Drax**)

Recent trends in policies, socioeconomy and future directions of the biodiesel industry J. H. Ng et al. *Clean Technologies and Environmental Policy*; Jun 2010, Vol. 12 (3), p.213-238

(To request: email library@energylibrary.org.nz Ref: **0711-Trends**)

Evaluating maximum wind energy exploitation in active distribution networks. Siano, P. et al. *IET Generation, Transmission & Distribution*; May 2010, Vol. 4 (5), p.598-608

(To request: email library@energylibrary.org.nz Ref: **0711-Wind**)

International comparisons of the experience of deregulation and restructuring of natural gas transmission industries. Waheed, A.; Malik, K. *Energy Sources Part B: Economics, Planning & Policy*; Jan 2010, Vol. 5 (1), p.1-18

(To request: email library@energylibrary.org.nz Ref: **0711-Gas**)

IPP retrofit nets 52MW more power and 2.7% fuel savings. Farmer, Robert. *Gas Turbine World*; May-June 2011, Vol. 41 (3), p.28-31

(To request: email library@energylibrary.org.nz Ref: **0711-IPP**)

Estimation of a sensitivity-based metric for detecting market power. Oh, HyungSeon; Thomas, Robert J. *Journal of Energy Engineering*; Jun 2010, Vol. 136 (2), p.32-41

(To request: email library@energylibrary.org.nz Ref: **0711-Market**)

Investment in electricity markets with asymmetric technologies. T. S. Genc; H. Thille. *Energy Economics*; Vol. 33 (3), May 2011, p.379-387

Capacity investments in electricity markets is one of the main issues in the restructuring process to ensure competition and enhance system security of networks. We study competition between hydro and thermal electricity generators under demand uncertainty. Producers compete in quantities and each is constrained: the thermal generator by capacity and the hydro generator by water availability. We analyze a two-period game emphasizing the incentives for capacity investments by the thermal generator. We characterize both Markov perfect and open-loop equilibria. In the Markov perfect equilibrium, investment is discontinuous in initial capacity and higher than it is in the open-loop equilibrium. However, since there are two distortions in the model, equilibrium investment can be either higher or lower than the efficient investment.

(To request: email library@energylibrary.org.nz Ref: **0711-Investment**)

Long term electricity demand forecasting in Turkey using artificial neural networks. Çunkaş, M.; Altun, A. A. *Energy Sources Part B: Economics, Planning & Policy*; Jul 2010, Vol. 5 (3), p.279-289

(To request: email library@energylibrary.org.nz Ref: **0711-Forecast**)

The multiple-mean-reversion jump-diffusion model for Nordic electricity spot prices. M. Jablonska. *The Journal of Energy Markets*; Summer 2011, Vol. 4 (2), p.3-VI

(To request: email library@energylibrary.org.nz Ref: **0711-Spot**)

Impact of penalty–reward mechanism on the performance of electric distribution systems and regulator budget. Mohammadnezhad-Shourkaei, H.; Fotuhi-Firuzabad, M. *IET Generation, Transmission & Distribution*; Jul 2010, Vol. 4 (7), p.770-779

As a part of the ongoing debate about competition in the electricity industry, regulators are increasingly considering performance-based regulation (PBR) as an alternative to improve the service quality. The fundamental principle behind PBR is that good performance should lead to higher profits, and poor performance should result in lower profits. A penalty–reward structure (PRS) in a PBR mechanism can enhance utility performance to align utility interests with customer's interests. During the implementation of PBR, regulators should spend or receive money to reward good performed utilities or penalised poor performed utilities, respectively. A technique is proposed, in this study, to not only motivate the utilities to improve their service quality but also equalise the total rewards paid and the total penalties received by regulators. This approach not only reduces the implementation cost of PBR for regulators but also removes any doubt from utilities that regulators apply PBR for money making. In addition, in order to achieve an efficient PBR for enhancing service reliability, more than one reliability index can be incorporated in PRS. Reward or penalty arisen from each index is weighted based on its impacts on the consumers and are combined to make a PBR cost for each utility. A comprehensive numerical study is accomplished to examine the applicability of the proposed approach. The results indicate that implementing the proposed method can effectively improve the service reliability and zero the implementation cost of PBR.

(To request: email library@energylibrary.org.nz Ref: **0711-Reward**)

Simulating the impact of wind production on locational marginal prices. Morales, J. M. et al. *IEEE Transactions on Power Systems*; 2011, Vol. 26 (2), p.820-828

(To request: email library@energylibrary.org.nz Ref: **0711-Prices**)



Demand response from household customers: Experiences from a pilot study in Norway. Saele, H.; Grande, O. S. *IEEE Transactions on Smart Grid*; Mar 2011 Vol. 2 (1), p.102–109

This paper presents experiences from a pilot study focusing on daily demand response from households, utilizing smart metering, remote load control, pricing based on the hourly spot price combined with a time of day network tariff, and a token provided to the customers indicating peak hours. The observed demand response was 1 kWh/h for customers with standard electrical water heaters. By aggregating this response, the potential for demand response from 50% of Norwegian households can be estimated at 1000 MWh/h (4.2% of registered peak load demand in Norway). A cost-effective realization of this potential should have high focus when considering smart metering technology. From a market perspective, a potential load reduction of this size should be bid into the day ahead market. Demand response to price (the day after) will not affect the price, but might create imbalances and the need for activating balancing resources, creating additional costs. © 2011 IEEE. Reprinted with permission of the IEEE

(To request: email library@energylibrary.org.nz Ref: **0711-DR**)

Service-oriented advanced metering infrastructure for smart grids. Chen, S. et al. *Journal of Energy & Power Engineering*; May 2011, Vol. 5 (5), p.455-460

(To request: email library@energylibrary.org.nz Ref: **0711-AMI**)

Evaluation of black-start schemes employing entropy weight-based decision-making theory. Lin, Zhenzhi et al. *Journal of Energy Engineering*; Jun 2010, Vol. 136 (2), p.42-49
(To request: email library@energylibrary.org.nz Ref: **0711-Black**)

Urban mining: Hibernating copper stocks in local power grids. Joakim Krook et al. *Journal of Cleaner Production*; Vol. 19 (9-10), June-July 2011, p.1052-1056
Large technical systems serving the everyday needs of people, such as water supply systems, power grids or communication networks, are rich in accumulated metals. Over time, parts of these systems have been taken out of use without the system infrastructure being removed from its original location. Such metal stocks in hibernation thus constitute potential resource reservoirs accessible for recovery. In this paper, obsolete stocks of copper situated in the local power grids of two Swedish cities are quantified. Emphasis is also on economic conditions for extracting such 'hibernating' cables. The results show that on a per customer basis, the two power grids contain similar amounts of copper, i.e. 0.04-0.05 tonnes per subscriber. However, the share of the copper stock that is in hibernation differs between the grids. In the larger grid of Gothenburg, almost 20% of the copper accumulated in the grid is no longer in use, while the obsolete share does not exceed 5% in the city of Linköping. For managers of local power grids, recovery of hibernating cables could be beneficial if integrated with other maintenance work on the grid. At the present price of copper, however, separate recovery of obsolete cables is not economically justified.
(To request: email library@energylibrary.org.nz Ref: **0711-Copper**)

Performance of infrastructure during the May 12, 2008 Wenchuan Earthquake in China. Bin Zhao; Taucer, Fabio. *Journal of Earthquake Engineering*; May 2010, Vol. 14 (4), p.578-600
(To request: email library@energylibrary.org.nz Ref: **0711-Quake**)

Extending the quantitative assessment of industrial risks to earthquake effects. Campedel, Michela et al. *Risk Analysis: An International Journal*; Oct 2008, Vol. 28 (5), p.1231-1246
This article includes case studies from oil refineries.
(To request: email library@energylibrary.org.nz Ref: **0711-Risks**)

Public safety at Ontario Power Generation's hydraulic works. Bennett, T. *International Journal on Hydropower & Dams*; Vol. 17 (4), 2010, p.70-72
(To request: email library@energylibrary.org.nz Ref: **0711-Public**)

Verification, validation, and uncertainty in computational fluids dynamics. Pelletier, D. *Canadian Journal of Civil Engineering*; Jul 2010, Vol. 37 (7), p.1003-1013
(To request: email library@energylibrary.org.nz Ref: **0711-CFD**)

Load-profile products: Non-standard power products. C. Janssen; J. Lueddeke. *Energy Risk*; May 2011, p.50-52
(To request: email library@energylibrary.org.nz Ref: **0711-Load**)

A transformer type fault current limiter with spark gap. Xiaoqing, Zhang; Li, Ming. *Electrical Engineering*; Jun 2010, Vol. 92 (1), p.1-6
(To request: email library@energylibrary.org.nz Ref: **0711-Spark**)

Statistical analysis methods for corrosion mapping inspection data. Stone, M. *Insight: Non-Destructive Testing & Condition Monitoring*; Feb 2011, Vol. 53 (2), p.76-81
Corrosion mapping, in which wall thicknesses over large areas are measured by 0 degree compression probe ultrasonics at closely-spaced points, is being used increasingly in oil and gas applications. This paper describes a new approach to statistical analysis based on wall thickness distributions derived from corrosion mapping data. The analysis methods developed are described and cumulative thickness distributions obtained in a wide range of field applications are presented. A range of situations in which corrosion of carbon steel is active are covered and the results include analysis of data from pressure equipment with CO2 corrosion, O2 corrosion, under deposit corrosion, naphthenic acid corrosion and corrosion under insulation. The results show that there are many situations in which the wall thickness distributions display strongly ordered behaviour. In many cases it is observed that the wall loss can be represented by an exponential distribution. Examples of wall loss distributions other than exponential are also provided. It is shown that the distributions established can be a useful basis for estimates for the uninspected areas when less than 100% coverage has been achieved. A summary covering applications of such analyses to integrity management practice is provided. This highlights the benefits of the use of underlying thickness distributions.
(To request: email library@energylibrary.org.nz Ref: **0711-Corrosion**)

Conversion of AC distribution lines into DC lines to upgrade transmission capacity. D. Marene Larruskain et al. *Electric Power Systems Research*; Vol. 81 (7), Jul 2011, p.1341-1348
(To request: email library@energylibrary.org.nz Ref: **0711-Lines**)

Thirty-six years of service experience with a national population of gas-insulated substations. Istad, M. Runde, M. *IEEE Transactions on Power Delivery*; Oct 2010 Vol. 25 (4), p.2448 – 2454
(To request: email library@energylibrary.org.nz Ref: **0711-Substations**)

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Reports

Forest Products Industry Profile: Global. March 2011 (39 pages).
A Datamonitor profile of the Forest Products industry around the world. Sections include: Executive summary of the industry; Market overview; Market value; Market segmentation; Competitive landscape; Leading companies in the industry; Market forecasts; Demographics; Further reading.
(To request: email library@energylibrary.org.nz Ref: **0711-Report**)



Latest EIANZ Environment Update

Water is the special topic featured in the July issue of the [EIANZ Environment Update](#). The topic includes articles on: Water as a key resource in energy production; Institutional arrangements and planning practices to allocate freshwater resources in New Zealand; The long-term reform of the water and wastewater industry; Calculation of oxygen in streams; WFD indicators and definition of the ecological status of rivers; Adaptation of urban water supply infrastructure to impacts from climate and socioeconomic changes; Collaborative water governance; Groundwater resource management in New Zealand; etc.

Other articles in the update are divided into the following sections:

1. Biodiversity
2. Business and management
3. Climate change
4. Conservation and restoration
5. Energy
6. Environmental education and communication
7. Environmental management systems
8. Environmental practice
9. Environmental and sustainability reporting
10. Public participation in environmental decision making
11. Sustainability



All articles in the update are from the Energy Library collection.

Energy on the Web

New Zealand

Scarcity pricing arrangements – proposed Code amendments – Electricity Authority consultation [paper](#).

Submissions on demand side bidding and forecasting – [Submissions](#) made to Electricity Authority.

Transmission Pricing Discussion Paper: Draft summary of submissions – [Submissions](#) made to Electricity Authority.

National Infrastructure Plan 2011 – Government [report](#).

New Zealand Energy Data File 2011 – MED [publication](#).

Consultation on update to SEIP and Other Removal Activities regulations – Government consultation [paper](#) (closes 5th August).

The Discount and Distribution Analysis is produced to compare electricity lines pricing around New Zealand – MED [analysis](#).

2010-15 Default Price-Quality Path for Electricity Distribution Businesses – Reset of Starting Prices, CPI Adjustment and Other Amendments - Draft Decisions Paper, July 2011 – Commerce Commission consultation [paper](#).

Informal workshop on measurement, reporting and verification (MRV) - [papers](#) from the international workshop hosted by Ministry for the Environment on May 2011.

Electricity and Gas Complaints Commissioner annual report – EGCC [publication](#).

EECA welcomes Fulton Hogan’s Christchurch biodiesel trial - EECA media [release](#).

Preliminary Evidence on Responses to the New Zealand Forestry Emissions Trading Scheme - Motu working [paper](#).

LED lighting - Consumer NZ [report](#).

"Same Power, Different Attitude" - Powershop [campaign](#) (which has offended some people due to the use of images of Saddam Hussein and other dictators).

Orion outages - This Orion [website](#) is useful for residents in Christchurch.

Green Growth – Issues for New Zealand- Discussion [paper](#) from the Green Growth Advisory Group.

Pure Advantage – [website](#) of a new group promoting a green growth strategy for NZ.

International

Saving Electricity in a Hurry - IEA [report](#).

Updated roadmap on Electric and plug-in hybrid electric vehicles – IEA [resource](#).

Offshore Wind: Forecasts of future costs and benefits – Renewable UK [report](#).

Renewables 2011 Global Status Report - REN21 [report](#).

Electricity Market Reform White Paper – DECC UK [document](#).

Renewables Roadmap - DECC UK [publication](#).

Gaining traction: Will consumers ride the electric vehicle wave? Electric vehicle consumer survey results for China, U.S., Europe and Japan – Deloitte Australia [report](#).

The World Energy Retail Market Rankings Report – New Zealand ranks as the 5th hottest customer-switching market in this [report](#).

The risks of hydrofracking - *Risk Management* magazine June 2011 [article](#).

Twitter users: Want to see more web resources we spot throughout the month? Click [here](#) to find us.

Fuel for Thought (Energy chocolate competition)

We'd like to hear your suggestions for **future special topics** in the Energy Update. Email kmcara@energylibrary.org.nz with your idea(s).

Draw closes 4pm Fri 19th August. Congratulations to Richard, who won last month's draw.



Other Services

IPENZ Engineering Update: View previous issues [here](#) and [request](#) to receive it by email (monthly). The special topic for the July issue was Life Cycle Assessment.

EIANZ Environment Update: View previous issues of this quarterly publication [here](#). A link to each new issue is included with the Energy Update.

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