

ENERGY LIBRARY

Engineering Update from Energy Library

January 2012



Welcome to the January copy of the "**Engineering Update**"

This update includes articles on a wide range of engineering disciplines, including management.

Special Topic : Water and human rights

All items listed are available to members as part of Energy Library membership and you can request items by emailing the item code to library@energylibrary.org.nz.

Non-members can request by supplying the reference to their organisational or public library.

Energy Library requests should be emailed to: library@energylibrary.org.nz.



MANAGEMENT/ STRATEGIC PLANNING

PROJECT MANAGEMENT

RISK MANAGEMENT

CORPORATE RESPONSIBILITY

ENG 53/01 Great companies think differently.

Kanter, R. M. Harvard Business Review, Volume 89, Issue 11 (November 2011) Pages 66-78. Corporate leaders have long subscribed to the belief that the sole purpose of business is to make money. That narrow view, deeply embedded in the American capitalist system, molds the actions of most corporations, constraining them to focus on maximizing short-term profits and returns to shareholders at the expense of worker safety and health, the environment, and society in general. In this article, HBS professor Kanter argues that a very different logic informs the practices of most high- performing and sustainable companies: An institutional logic. These companies believe that they are more than moneymaking machines; they are a vehicle for advancing societal goals. They deliver more than just financial returns; they also build enduring institutions. At great companies, institutional logic takes its place alongside economic logic in research, analysis, and managerial decision making. Six facets of institutional logic--a common purpose, a long-term focus, emotional engagement, partnering with the public, innovation, and self- organization--radically alter leadership and corporate behavior and form the building blocks of a more sustainable competitive advantage.

ENG 53/02 The competitive advantages of the Spanish companies in the international toll road industry.

Carpintero, S. Journal of Civil Engineering & Management, Volume 17, Issue 4 (2011) Pages 483-493.

ENG 53/03 Global clusters of innovation: The case of Israel and Silicon Valley.

Engel, J. S. and del-Palacio, I. California Management Review, Volume 53, Issue 2 (Winter 2011) Pages 27-49.

ENG 53/04 Exploring the feasibility of cradle to cradle (product) design: Perspectives from New Zealand scientists.

Reay, S. D. et al. Journal of Sustainable Development, Volume 4, Issue 1 (2011) Pages 36-44.

ENG 53/05 Intellectual capital: A competitive asset for driving innovation in engineering design firms.

Yitmen, I. Engineering Management Journal, Volume 23, Issue 2 (2011) Pages 3-19.

ENERGY LIBRARY

ENG 53/06 An evolved practice: The board's access to senior managers.

Morrison, R. Corporate Governance Advisor, Volume 19, Issue 2 (March/April 2011) Pages 34-38.

ENG 53/07 HBR's list of audacious ideas for solving the world's problems.

Shiller, R. J. et al. Harvard Business Review, Volume 90, Issue 1 (January/February 2012) Pages 49-64.

As the global economy vacillates between signs of recovery and omens of collapse, businesses and governments are clamping down. But the world doesn't need austerity; it needs audacity—bold, inventive ideas that take on big problems. So HBR asked experts from a range of disciplines to propose them.

ENG 53/08 A rating system for sustainability of industrial projects with application in oil sands and heavy oil projects: Areas of excellence, sub-divisions, and management interactions.

Poveda, C. A. and Lipsett, M G. Journal of Sustainable Development, Volume 4, Issue 4 (2011) Pages 3-13.

ENG 53/09 Technology management--structuring the strategic dialogue.

Phaal, R. and Palmer, P. J. Engineering Management Journal, Volume 22, Issue 1 (March 2010) Pages 64-74.

ENG 53/10 What every CEO needs to know about the cloud.

McAfee, A. Harvard Business Review, Volume 89, Issue 11 (November 2011) Pages 124-132. Cloud computing is a sea change in the way companies use technology; it's as inevitable and significant as the shift from steam power to electricity on the factory floor. Because criticisms of the cloud have gotten a lot of hype, however, many companies are hesitant to explore it. In this article McAfee, a principal research scientist at MIT's Center for Digital Business, debunks commonly cited concerns about the cloud. When it comes to cost, reliability, and security, he says, the cloud promises to equal or better on-premise computing. Moreover, as the experiences of companies like 3M, the global contractor Balfour Beatty, and the consulting firm CSC show, cloud computing offers sizable benefits, such as improved productivity, easier collaboration, the ability to mine data for insights, and higher capacity without major capital investment. Here, McAfee walks readers through the three basic categories of cloud computing: infrastructure as-a-service (the leasing of raw computing capacity), platform-as-a-service (the leasing of computers ready for software development), and software-as-a service (the hosting of applications for users). Arguing that CEOs and senior managers need to take the lead on the shift to the cloud, he then outlines how companies can get started.

ENG 53/11 Cloudsourcing: Managing cloud adoption.

Géczy, P., Izumi, N. and Hasida, K. Global Journal of Business Research, Volume 6, Issue 2 (2012) Pages 57-70.

ENERGY LIBRARY

ENG 53/12 Swapping generators' assets: Market salvation or wishful thinking?

Downward, A. et al. The Energy Journal, Volume 32, Issue 2 (2011) Pages 31-58.

The idea of rearranging generation assets amongst firms to improve competition has once again surfaced in a recent report on improvements to the New Zealand Electricity Market. We present counterexamples to show that re-arranging assets, either with asset divestiture to a new firm, or asset swaps between existing firms, may actually reduce competition in electricity markets. Our examples emphasize features that are particular to electricity, such as seasonality and transmission constraints. These results warn that applying economic rules of thumb to electricity markets may lead to erroneous conclusions.

Abstract supplied with permission from IAEE

www.iaee.org/en/publications/ejsearch.aspx?user=guest



HUMAN RESOURCES

TRAINING/HEALTH/SAFETY

PROFESSIONAL DEVELOPMENT/SELF IMPROVEMENT

ENG 53/13 Employment patterns during the recovery: Who are getting the jobs and why?

Şahin, A and Willis, J. L. Economic Review, Volume 96, Issue 3 (2011) Pages 5-34.

ENG 53/14 An engineer's alphabet: Gleanings from the softer side of a profession.

Petroski, H. Civil Engineering, Volume 81, Issue 10 (October 2011) Pages 70-77.

An excerpt from the book "An Engineer's Alphabet: Gleanings from the Softer Side of a Profession," by Henry Petroski is presented

ENG 53/15 HDM modeling as a tool to assist management with employee motivation: The case of silicon forest.

Harell, G. and Daim, T. U. Engineering Management Journal, Volume 22, Issue 1 (March 2010) Pages 23-33.

ENG 53/16 Managers' attitudes to teleworking.

Scholefield, G. and Peel, S. New Zealand Journal of Employment Relations, Volume 34, Issue 3 (01/10/2009) Pages 1-13.

ENERGY LIBRARY

ENG 53/17 Time management training and perceived control of time at work.

Häfner, A. and Stock, A. Journal of Psychology, Volume 144, Issue 5 (September/October 2010) Pages 429-447.

ENG 53/18 Using paper-and-pencil solutions to assess problem solving skill.

Taraban, R., Craig, C. and Anderson, E. E. Journal of Engineering Education, Volume 100, Issue 3 (2011) Pages 498-519.

ENG 53/19 The safety factor: case studies in engineering judgment.

Musto, J. C. International Journal of Mechanical Engineering Education, Volume 38, Issue 4 (October 2010) Pages 286-296.



TECHNICAL ARTICLES

(ABSTRACTS AVAILABLE ON REQUEST)

ENG 53/20 Engineering's newest marvel.

Zanetell, D. et al. Civil Engineering, Volume 81, Issue 10 (October 2011) Pages 56-86.
The article evaluates the architectural design of Hoover Dam bridges located above the Colorado River.

ENG 53/21 Methods for enlarging transportation tunnels while keeping tunnels fully operational.

Tonon, F. Practice Periodical on Structural Design & Construction, Volume 15, Issue 4 (November 2010) Pages 248-271.

ENG 53/22 Findings of the International Road Tunnel Fire Detection Research Project.

Liu, Z. et al. Fire Technology, Volume 46, Issue 3 (July 2010) Pages 697-718.

ENG 53/23 Advanced analysis techniques in the design of longitudinal tunnel ventilation system using jet fans.

Shahcheraghi, N. ASHRAE Transactions, Volume 117, Issue 1 (2011) Pages 637-648.

ENERGY LIBRARY

ENG 53/24 Structural fire safety of circular concrete railroad tunnel linings.

Caner, A. and Böncü, A. Journal of Structural Engineering, Volume 135, Issue 9 (September 2009) Pages 1081-1092.

ENG 53/25 Advanced logistical systems for the maintenance of overhead distribution lines through dcc with the use of laser monitoring.

Tajnssek, V., Pihler, J. and Roser, M. IEEE Transactions on Power Delivery, Volume 26, Issue 3 (July 2011) Pages 1337-1343.

ENG 53/26 High strength steel in buildings and civil engineering structures: Design of connections.

Coelho, A. M. G. and Bijlaard, F. Advances in Structural Engineering, Volume 13, Issue 3 (June 2010) Pages 413-429.

ENG 53/27 Behaviour of compacted silt used to construct flood embankment.

Gráinne El Mountassir et al. Proceedings of the ICE - Geotechnical Engineering, Volume 164, Issue 3 (June 2011) Pages 195-210.

ENG 53/28 Effect of density and compressibility on K₀ of cohesionless soils.

Guo, P. Acta Geotechnica, Volume 5, Issue 4 (2010) Pages 225-238.

ENG 53/29 Geotechnical design for the Port Botany expansion project, Sydney.

Davies, P. R. E. and McIlquham, J. D. Proceedings of the ICE - Geotechnical Engineering, Volume 164, Issue 3 (June 2011) Pages 149-167.

ENG 53/30 Comparisons between global warming potential and cost-benefit criteria for optimal planning of a municipal solid waste management system.

Ni-Bin Chang et al. Journal of Cleaner Production, Volume 20, Issue 1 (January 2012) Pages 1-13.

ENG 53/31 Carbon dioxide transport infrastructure: Key learning and critical issues.

Watt, J. Journal of Pipeline Engineering, Volume 9, Issue 4 (December 2010) Pages 213-222.

ENG 53/32 Damages caused by floods and flash-floods upon critical infrastructures. Case study: Maramureş county (Romania).

Nour, E. et al. Advances in Environmental Sciences, Volume 3, Issue 2 (August 2011) Pages 91-98.

ENERGY LIBRARY

ENG 53/33 Environmental factors affecting ultraviolet photodegradation rates and estrogenicity of estrone and ethinylestradiol in natural waters.

Atkinson, S. K. et al. Archives of Environmental Contamination and Toxicology, Volume 60, Issue 1 (2011) Pages 1-7.

ENG 53/34 Environmental policy decision-making support tools and pollution reduction technologies: A summary.

Klemes, J. J. Clean Technologies and Environmental Policy, Volume 12, Issue 6 (2010) Pages 587-589.

ENG 53/35 Environmental-impact reduction through simultaneous design, scheduling, and operation.

Al-mutairi, E. and El-halwagi, M. Clean Technologies and Environmental Policy, Volume 12, Issue 5 (2010) Pages 537-545.

ENG 53/36 Estimating the value of improved street lighting: A factor analytical discrete choice approach.

Willis, K. G., Powe, N. A. and Garrod, G. D. Urban Studies, Volume 42, Issue 12 (01/11/2005) Pages 2289-2303.

ENG 53/37 Tangible intervention: Improving the effectiveness of lighting control systems.

Dugar, A. M. and Donn, M. R. Lighting Research & Technology, Volume 43, Issue 3 (September 2011) Pages 381-393.

ENG 53/38 The impact of modified EU ETS allocation principles on the economics of CHP-based district heating systems.

Westner, G. and Madlener, R. Journal of Cleaner Production, Volume 20, Issue 1 (January 2012) Pages 47-60.

ENG 53/39 Piles for offshore wind turbines: A state-of-the-art review. Proceedings of the ICE - Geotechnical Engineering, Volume 164, Issue 4

Gavin, K., Igoe, D. and Doherty, P. Pages 245-256.

ENG 53/40 Regional-scale identification of groundwater-surface water interaction using hydrochemistry and multivariate statistical methods, Wairarapa Valley, New Zealand.

Guggenmos, M. R. et al. Hydrology & Earth System Sciences Discussions, Volume 8, Issue 4 (2011) Pages 6443-6487.

ENG 53/41 Removal of heavy metals from landfill leachate using horizontal and vertical subsurface flow constructed wetland planted with *limnocharis flava*.

Kamarudzaman, A. N., Abdul Aziz, R. and Ab Jalil, M. F. International Journal of Civil & Environmental Engineering, Volume 11, Issue 5 (October 2011) Pages 85-91

ENG 53/42 Smart pipes--instrumented water pipes, can this be made a reality?

Metje, N. et al. Sensors, Volume 11, Issue 8 (2011) Pages 7455-7475.

ENG 53/43 Vibration characteristics of concrete-steel composite floor structures.

De Silva, S. and Thambiratnam, D. P. ACI Structural Journal, Volume 108, Issue 6 (2011) Pages 706-714.

ENG 53/44 Water leakage from the power tunnel of Gezende Dam, southern Turkey: A case study.

Türkmen, S. Environmental Earth Sciences, Volume 61, Issue 2 (July 2010) Pages 419-427.

ENG 53/45 Water supply performance and fire suppression during the World Trade Center disaster.

Bonneau, A., O'Rourke, T. D. and Palmer, M. C. Journal of Infrastructure Systems, Volume 16, Issue 4 (December 2010) Pages 264-272.

ENG 53/46 Designing storm-water controls to promote sustainable ecosystems: Science and application.

Palhegyi, G. E. Journal of Hydrologic Engineering, Volume 15, Issue 6 (June 2010) Pages 504-511.

ENG 53/47 Deterioration rates of typical bridge elements in New York.

Agrawal, A. K., Kawaguchi, A. and Chen, Z. Journal of Bridge Engineering, Volume 15, Issue 4 (July 2010) Pages 419-429.

ENG 53/48 Vibration characteristics of concrete-steel composite floor structures.

De Silva, S. and Thambiratnam, D. P. ACI Structural Journal, Volume 108, Issue 6 (2011) Pages 706-714.

SPECIAL TOPIC

Human rights and water

(ABSTRACTS AVAILABLE ON REQUEST)

ENG 53/49 The right to water and its relevance to sustainable water governance.

Grimes, H. J. Proceedings of the ICE - Engineering Sustainability, Volume 164, Issue 2 (June 2011) Pages 119-128.

Over the past decade, the focus of water sector improvements in developing countries has moved away from enhancing physical infrastructure towards strengthening water sector governance. However, good water governance is a mechanism for improvement, not an end in itself, and the ultimate goal of governance reforms is still rarely defined clearly. One notable exception is the water reform process in South Africa; the right of access to water services is enshrined in South Africa's constitution and defined in subsequent legislation. Unfortunately, the implementation of reforms has been less straightforward and has recently brought water service providers into conflict with consumers who consider their right to water is being violated. This paper demonstrates the utility of the United Nations (UN) general comment No. 15 on the 'right to water' in assisting those responsible for the planning and implementation of sustainable water sector governance reforms. The key aspects of the right to water are explained and a number of myths refuted. The paper discusses some of the problems encountered by water services institutions in South Africa and how these could have been avoided.

Abstract reprinted with the permission of Thomas Telford Limited:

http://www.ice.org.uk/services/services_journals.asp

ENG 53/50 Environmental rights on the wrong side of history: Revisiting Canada's position on the human right to water.

Collins, L. Review of European Community & International Environmental Law, Volume 19, Issue 3 (2010) Pages 351-365.

ENG 53/51 Neither friend nor foe: Why the commercialization of water and sanitation services is not the main issue in the realization of human rights.

De Albuquerque, C. and Winkler, I. T. Brown Journal of World Affairs, Volume 17, Issue 1 (Fall/Winter 2010) Pages 167-179.

ENG 53/52 The emergence of water as a 'human right' on the world stage: Challenges and opportunities.

Khadka, A. K. International Journal of Water Resources Development, Volume 26, Issue 1 (March 2010) Pages 37-49.



ENG 53/53 Policy entrepreneurs, issue experts, and water rights policy change in Colorado.

Crow, D. A. Review of Policy Research, Volume 27, Issue 3 (May 2010) Pages 299-315.

ENG 53/54 Reducing the gap between international water law and human rights law: The UNECE Protocol on Water and Health.

Tanzi, A. International Community Law Review, Volume 12, Issue 3 (September 2010) Pages 267-285.

ENG 53/55 A comparison of water rights systems in China and Australia.

Speed, R. International Journal of Water Resources Development, Volume 25, Issue 2 (June 2009) Pages 389-405.

ENG 53/56 The implications of formulating a human right to water.

Bluemel, E. B. Ecology Law Quarterly, Volume 31, Issue 4 (2004) Pages 957-1006.

ENG 53/57 The road to the well: An evaluation of the customary right to water.

Bates, R. Review of European Community & International Environmental Law, Volume 19, Issue 3 (2010) Pages 282-293.

ENG 53/58 The United Nations concept of water as a human right: A new paradigm for old problems?

Langford, M. International Journal of Water Resources Development, Volume 21, Issue 2 (June 2005) Pages 273-282.

ENG 53/59 Water as a human right: Towards civil society globalization.

Jayyousi, O. A. International Journal of Water Resources Development, Volume 23, Issue 2 (June 2007) Pages 329-339.

ENG 53/60 The water ethic: The inexorable birth of a certain alienable right.

Simus, M. F. and Workman, J. G. Tulane Environmental Law Journal, Volume 23, Issue 2 (June 2010) Pages 439-472.

ENG 53/61 Water privatization trends in the United States: Human rights, national security, and public stewardship.

Environmental Law & Policy Review, Volume 33, Issue 3 (May 2009) Pages 785-849.

ENG 53/62 Water, policy and governance.

Hukka, J. J., Castro, J. E. and Pietilä, P. E. Environment & History, Volume 16, Issue 2 (May 2010) Pages 235-251.



ENG 53/63 Whose job is it anyway? Governmental obligations created by the human right to water.

Hardberger, A. Texas International Law Journal, Volume 41, Issue 3 (Summer 2006) Pages 533-568.

- Energy Library member requests should be emailed to library@energylibrary.org.nz.
- Our members can request items by quoting the code number. Those who are not members of Energy Library can obtain copies from their organisational or public library.

Energy Library also produces a monthly Energy Update and a quarterly Environment Update. View all newsletters online <http://www.energylibrary.org.nz/news.asp>

Another service offered is a language coaching service for international engineers who want to improve their English language skills. For more details please email library@energylibrary.org.nz