



Sustainability in the electricity utility sector

executive summary



electricity utility sector

Background: why tackle this topic?

Electricity is more than energy. It is a vital component of infrastructure and an essential part of modern day life. It plays a critical role in the economies of most countries. Electric power has become a prime mover for productivity, wages and jobs throughout the world; and the lifeblood of what is now being referred to as the new global economy.

Looking to the future, electricity will play an even greater transformative role in the 21st century. Electricity-based innovation is supporting increasingly sophisticated global, real-time networks for communication, finance, trade and technology development. Electricity is driving new technologies – ranging from lasers to microprocessors – that will make possible continuous improvements in industrial productivity and efficiency in the century ahead. Electricity will act as a catalyst for business development in a number of sectors.

Yet, despite these vital contributions, the sector faces some significant and wide-ranging hurdles. For example:

- > Will key shifts in market conditions, such as increased competition, affect environmental performance?
- > How will the industry maximize the viability and profitability of existing assets while ensuring adequate (and competitive) investment in the next generation of technology? Are stakeholder expectations valid, realistic, and achievable? How does a company know this?

- > How will electricity be provided to the 2 billion people currently without access?

Business leaders of the electric utility industry felt there was a pressing requirement to determine how electricity needs will be met in a sustainable manner – a path forward that allows socially responsible corporate practices to co-exist and flourish alongside economic growth.

The Players

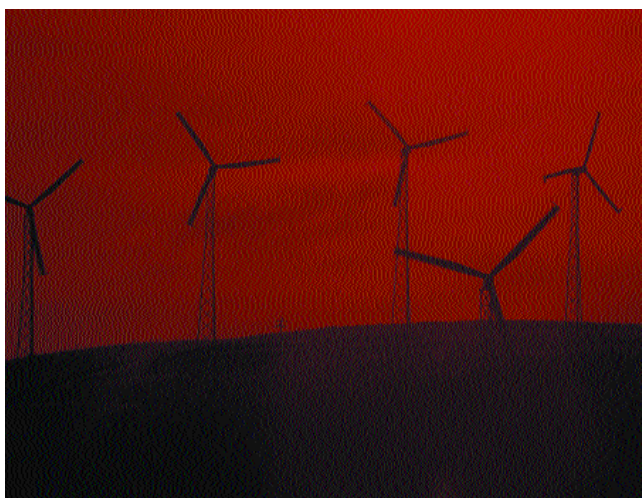
Against this background, eleven companies with broad geographic representation agreed to support and participate in this project. Convened through the World Business Council for Sustainable Development, they included: BC Hydro (Canada); British Energy (United Kingdom); EPCOR (Canada); Eskom (South Africa); Exelon Corporation (United States); Kansai Electric Power Company (Japan); Ontario Power Generation (Canada); Powergen (United Kingdom); Tokyo Electric Power Company (Japan); TransAlta Corporation (Canada); and Western Power Corporation (Australia). The work was co-chaired by the Chairman of Eskom, Reuel Khoza and the President & CEO of Ontario Power Generation, Ron Osborne.

The project benefited from a third-party review team with substantial expertise on this topic. This team validated the contents of this report and ensured both developed and developing country perspectives were included. John Drexhage, International Institute for Sustainable Development (Canada), chaired the third party review group.

Issues and Challenges

This project took stock of the key sustainable development issues and challenges facing the electricity industry. Different electricity production technologies as well as how electrical systems are operated to meet electricity demand are described. Key shifts in market conditions, such as competition in the electricity sector, technology advancements, and rising expectations of stakeholders are also highlighted.

A range of principles and strategies were identified, and industry innovative practices among the project members were surveyed. The report contains a detailed description of over 80 examples of how participating companies addressed the realities of everyday dilemmas and highlights how differing national and company circumstances drive strategic direction. The report concludes with a discussion of the many substantive questions and challenges that will influence the nature of sustainable energy strategies in the future.



PARTICIPATING COMPANIES

- BC Hydro (Canada)
- British Energy (United Kingdom)
- EPCOR (Canada)
- Eskom (South Africa)
- Exelon Corporation (United States)
- Kansai Electric Power Company (Japan)
- Ontario Power Generation (Canada)
- Powergen (United Kingdom)
- Tokyo Electric Power Company (Japan)
- TransAlta Corporation (Canada)
- Western Power Corporation (Australia)

Key Trends and Findings

The points below highlight initiatives, actions or trends that respond to sustainable development challenges. These contributions neither encompass all of the innovative efforts or thinking of individual utilities - nor do they claim to represent achievement of the goal of sustainable development. Rather, we regard these findings as the emergence of some of the current innovative practices in our industry.

Economic contributions

- > Electricity companies are leveraging investment in research, development and marketing of new sustainable energy technologies and customer offerings.
- > New energy sources and new emission-reduction technologies that promise to influence the way in which electricity is generated in the future are gaining momentum e.g. fuel cell technology and energy storage systems.
- > In developing countries, research initiatives can and should include technology diffusion efforts as well as innovative approaches to ensure cost effective and relevant technology development.
- > Many companies are conducting long- term strategic planning initiatives and ensuring that sustainable development issues are integrated into their future investment decisions.
- > Some utilities use their considerable purchasing power, and their procurement practices to encourage suppliers and contractors to operate in an environmentally responsible manner and others support small, medium and micro enterprises from disadvantaged sectors of the economy.
- > Some companies are developing new businesses to contribute to the financial component of their core business. Examples include the establishment of venture capital subsidiaries and business services companies.

Environmental Strides

- > Tighter environmental controls and increased stakeholder expectations have prompted electric utilities to invest in effective pollution-control technologies.
- > Many electric utilities are now taking early action by implementing greenhouse gas (GHG) emission strategies, in the absence of any legislative requirements.
- > Many electric utilities are setting up low impact renewable power programs, establishing performance targets, and committing to provide specific amounts of renewable electricity demand within specific time frames.
- > The participating electric utilities are improving their own internal efficiencies of electricity generation and distribution.

- > All companies that use nuclear generation are working with the government or regulatory agencies in their countries to find a long-term solution for the spent fuel produced at their generating stations – either direct disposal of spent fuel, or re-processing of the spent fuel and the disposal of the residual high level radioactive waste, or a combination of these two options.
- > International Environmental Management System standards, like ISO 14001, are important strategic tools being used by the electricity sector to manage environmental risks more systematically, and in going beyond compliance to strive for continual improvement.
- > Many companies produce sustainable development reports that expand upon their environmental, economic and social performance.
- > Many electricity companies are undertaking nature conservation initiatives directly related to the impact of their generating operations on the local environment.

Social Challenges

- > Some electric utilities are only now focusing their attention on the broader issues of corporate social responsibility.
- > Electrification is a major factor in bringing developing countries onto a sustainable development path for the future. Not only does electrification provide health and welfare benefits to end users, and provide environmental benefits for society at large, but it can spur important economic growth. Electric utilities that contribute to electrification in developing countries are making a major contribution to sustainable development.
- > Electric utilities are now acknowledging that they must also gain broader societal acceptance for their operations, particularly in the communities where their facilities are located.
- > There is an increasing expectation among the public at large that the business sector should contribute to the well being of society. Community-based support will continue to be a significant priority for electricity companies.
- > The social sustainability of companies also involves adopting and promoting ethical business practices. Many electricity companies are beginning to formalize codes of conduct as part of their commitments to corporate social responsibility.
- > Companies reported on a number of progressive workplace initiatives to protect the well being of their employees, such as programs to balance the demands of work and home life, preventative health assessments, safety management, diversity, harassment, flexible benefits and co-operative union/management relations.

These examples should be regarded as the emergence of some current innovative practices in our industry and, hopefully, the basis for all utilities to learn from the experience of others, and be motivated to build upon and expand these initiatives in support of sustainable development.

The Challenges Ahead

Despite the progress that has been made, it is clear that there is more work to be done in this sector. There are two obvious areas requiring work. First, there are ongoing requirements to find innovative ways to continue the integration of sustainable development practices into existing operations. The second area for consideration is on seeking support for future energy options that meet the needs of stakeholders as well as the realities of the electric utility sector, including increased competition in the sector.

With respect to improving existing operations, the following are some of the challenges identified through this analysis:

- > looking for innovative ways to supply and increase access to affordable electricity in developing countries, including infrastructure development, innovative financing, etc;
- > investigating how demand side management (DSM) options (e.g., efficient lighting and heating) can assist with affordability of electricity and poverty alleviation;
- > identifying additional mechanisms to integrate sustainable development thinking into the decision-making of our businesses;
- > expanding supply chain management to further environmental and social goals of the business;
- > focusing more on issues of corporate social responsibility and considering the views of all stakeholders, including employees, regulators, community leaders, critics, suppliers, and academics/scientists; and
- > expanding the use of partnerships in addressing sustainable development issues.





Seeking support from stakeholders on future generation and transmission options will be another challenge for the sector. While each country will have its own priorities with respect to future energy options, we see the following as some of the challenges ahead:

- > exploring the potential of extending the life of existing assets based on environmental, social, and economic considerations;
- > balancing the economies of scale of large, centralized plant versus the inherent flexibility of smaller, decentralized investments;
- > resolving with government and other stakeholders the barriers related to investment in new technologies with lower environmental impacts than existing generation (i.e., renewable energy, clean coal technologies, nuclear technologies);
- > continuing to invest in research into new technologies that will assist with making the step change necessary to move the sector further down the sustainable development path;
- > finding ways to make economic DSM investments more widespread; and
- > exploring new ways to engage stakeholders in discussions on future energy options.

Despite an increasing reliance on electricity options such as wind, solar, and biogas, for the foreseeable future (i.e., twenty to thirty years hence) coal, nuclear, large hydroelectric, and gas will continue to be the major bulk electricity fuel options. Each has its own sustainability challenges. Issues of long-term storage and disposal of spent fuel or high level radioactive waste, if reprocessing of the spent fuel is performed, will need to be resolved to retain nuclear as a viable future energy option. The development of clean coal technologies and carbon sequestration techniques will be critical to continued use of coal. Flooding of ecosystems and relocation of populations are some of the limitations of large-scale hydroelectric development, which will need attention if future development is to occur. Gas, although a cleaner fuel than coal, is still carbon-based and issues of availability and cost will need to be addressed. None of these generation options is without environmental or social issues.

The way forward holds significant challenges for the electric utility sector, not only those challenges of implementing sustainable development practices into the business, but also doing so at a time when the business environment is undergoing fundamental, unprecedented change. Electric utilities are confronted by a number of uncertainties associated with evolving government regulations, market restructuring, customer preferences, and technological innovation.

The way in which companies tackle environmental and social issues in future may also change. In a world of escalating demands for transparency and stakeholder engagement, dialogue will need to be broad and inclusive of a range of stakeholders. In an increasingly interconnected and globalized world, these stakeholders must include customers, regulators, governments, electricity-sector watchdog agencies, environmental NGOs, and academics/scientists. These groups influence decision-makers and will be engaged in the debate about future energy options, particularly as governments debate future energy direction and individual utilities seek changes to their operating licenses and make long-term investments in new technologies.

The environmental and social pressures facing electric utilities are complex and do not respect national boundaries and the investments expected of companies in response to these pressures are substantial. Sharing information on innovative practices, and partnering with other companies in research and development, holds the most promise for great inroads toward sustainable energy futures.

This project has allowed the member companies to take a critical look at their current operations, benchmark their progress against other utilities and define what additional challenges lie ahead. The future progress towards a more sustainable path will be a complex process and unique for each member company. However this body of work has laid the foundation for future efforts and will in itself contribute to the overall knowledge in the sector, as well as assist other utilities with strategic decision-making

About the WBCSD

The World Business Council for Sustainable Development (WBCSD) is a coalition of 160 international companies united by a shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress. Our members are drawn from more than 30 countries and 20 major industrial sectors. We also benefit from a Global Network of 38 national and regional business councils and partner organizations involving more than 1,000 business leaders globally.

Our mission

To provide business leadership as a catalyst for change toward sustainable development, and to promote the role of eco-efficiency, innovation and corporate social responsibility.

Our aims

Our objectives and strategic directions, based on this dedication, include:

Business leadership • to be the leading business advocate on issues connected with sustainable development.

Policy development • to participate in policy development in order to create a framework that allows business to contribute effectively to sustainable development.

Best practice • to demonstrate business progress in environmental and resource management and corporate social responsibility and to share leading-edge practices among our members.

Global outreach • to contribute to a sustainable future for developing nations and nations in transition.

Disclaimer

This report is released in the name of the WBCSD. Like other WBCSD reports, it is the result of a collaborative effort by members of the secretariat and executives from several member companies. Drafts were reviewed by members of the project and a third party review team.

Ordering publications

WBCSD, c/o SMI (distribution services) limited

Tel (44 1438) 748 111

Fax (44 1438) 748 844

E-mail wbcSD@earthprint.com

Web www.earthprint.com/

Publications are available on WBCSD's website: www.wbcSD.org

Copyright © World Business Council for Sustainable Development, July 2002

Printed in Switzerland by Atar Roto Presse