



THE BUSINESS CASE FOR CORPORATE USE OF RENEWABLE ENERGY IN EUROPE

INSTALLMENT 8

BY CRAIG HANSON AND DIANA PROFIR

I. GROWING CORPORATE INTEREST IN USING RENEWABLE ENERGY

European corporations are increasingly using renewable energy resources for their electricity and thermal energy needs. For instance:

- British Telecom, The Co-Operative Group, SE-Banken, and other European firms are buying wind-generated electricity from their retail power providers.
- IKEA, Lufthansa, Ford UK, and other firms have installed on-site solar electric (also called solar photovoltaic or PV) systems to provide clean power at some of their facilities.
- Willamette Industries, Stora Enso, International Paper, IKEA, Johnson & Johnson, and others are using biomass instead of natural gas or coal to generate heat and/or power at corporate sites.
- Major corporations—including ABN AMRO, IKEA, Rabobank, Nutreco, and Tetra Pak—now obtain nearly 100 percent of their electricity in certain European countries from renewable resources.

Renewable energy is energy obtained from resources that are essentially inexhaustible, including the wind, sun, living organisms or their byproducts (biomass), the earth's own internal heat (geothermal), and the movement of water (hydro, wave, and tidal). In contrast, fossil fuels—natural gas, coal, and oil—and nuclear fuels have a finite supply. Renewable resources can be used to generate thermal energy and/or electricity.

Executive Summary

What is the business case for companies to use renewable resources to meet their energy needs? The World Resources Institute's experience working with a number of leading corporations indicates that firms are switching to renewable energy to obtain one or more of the following business benefits:

- *Lower or stabilized energy costs.* In some situations, using renewable energy can directly lower corporate energy costs or stabilize corporate energy prices.
- *Reduced emissions.* Using renewable energy can help companies reduce their emissions of greenhouse gases and other airborne pollutants that pose regulatory and financial risks to firms.
- *Stronger stakeholder relationships.* Using renewable energy can strengthen a company's image and relationships with its various stakeholders, including customers, local communities, employees, and shareholders.

Why are these and other firms switching to energy from renewable resources? This installment of the World Resources Institute's (WRI) *Corporate Guide to Green Power Markets* series explores this question. It identifies and discusses three major types of business benefits companies obtain by using renewable energy. This installment also provides a number of corporate examples to illustrate these "business cases."

The Green Power Market Development Group

Convened in 2000 by the World Resources Institute, the Green Power Market Development Group is a unique commercial and industrial partnership dedicated to building corporate markets for green power. The Group seeks to develop 1,000 MW of new, cost-competitive green power by 2010—enough energy to power 750,000 homes. Group partners are Alcoa Inc., The Dow Chemical Company, DuPont, FedEx Kinko's, General Motors, Georgia-Pacific LLC, Google Inc., IBM, Interface, Johnson & Johnson, NatureWorks LLC, Pitney Bowes, Staples, and Starbucks.

In 2005, WRI launched a similar partnership to build commercial and industrial markets for renewable energy in Europe. The Green Power Market Development Group—Europe seeks to demonstrate the business case for corporate use of renewable energy, evaluate and deploy a variety of renewable energy technologies, and engage the marketplace to take green power to scale. Group partners include British Telecom, The Dow Chemical Company, DuPont, General Motors, Holcim, IBM, IKEA, InterfaceFLOR, Johnson & Johnson, Michelin, Nike CSC, Staples, and Tetra Pak.

The Group is convened by the World Resources Institute (www.wri.org). Collaborating with WRI in Europe is The Climate Group (www.theclimategroup.org), an international nonprofit organization dedicated to building coalitions of businesses and governments to address climate change.

More information about the Green Power Market Development Group and its activities can be found at www.thegreenpowergroup.org. This website includes publications, corporate renewable energy case studies, and background information about various renewable energy technologies.

II. THREE BUSINESS CASES FOR USING RENEWABLE ENERGY

As is evident by the experience of the Green Power Market Development Group (*Box 1*), firms in Europe are switching to renewable energy to obtain one or more of the following business benefits: (1) lower or stabilized energy costs, (2) reduced emissions of greenhouse gases and other airborne pollutants that pose a current or future regulatory risk, and (3) stronger stakeholder relationships. Each benefit is a “business case” for using renewable energy; that is, each constitutes a business rationale for management to switch at least some of the corporation’s energy supply to renewable resources.

Before exploring these business cases, three observations are worth noting. First, not every renewable energy opportunity has a strong business case for a corporate energy user. In some situations, the potential business benefits do not justify the cost of renewable energy. Second, the particular business case relevant to management often varies among companies and even among facilities within the same firm. For instance, because economic incentives and renewable resource availability often differ between countries, a renewable energy project that is financially attractive to a business unit in one country may not be attractive to a business unit in another. Third, some renewable energy projects or purchases can provide more than one business benefit simultaneously. That is, one benefit does not preclude another.

III. LOWER OR STABILIZE ENERGY COSTS

In some circumstances, using renewable energy can directly lower or stabilize a company’s energy costs.

Lower corporate energy costs

A common misperception is that renewable energy is always more expensive than energy from conventional sources. But many companies are finding that under the right conditions this is not necessarily so. In fact, some firms are switching to renewable resources in order to *reduce* their energy costs.

Firms in Europe are switching to renewable energy to obtain one or more business benefits.

Several types of on-site renewable energy projects can cut costs. Geothermal heat pumps, for example, can reduce heating and cooling expenses at corporate facilities. For Johnson & Johnson’s DePuy business unit in France, a geothermal heat pump is saving the facility nearly €9,000 a year (*Box 2*).

Substituting biomass for fossil fuels in industrial boilers can also reduce corporate energy costs in some circumstances, especially for firms that have large thermal energy loads. Rather than buying natural gas or utility-supplied electricity, Stora Enso and other companies in the forest products industry combust wood wastes and other biomass residues to generate heat and electricity at their mills and processing plants. Biomass as an energy source can be cost-effective, particularly if (a) the residues are a by-product of a

Located in Laakdal, Belgium, the Nike Customer Service Center (CSC) is responsible for the distribution of all Nike apparel, footwear and sports accessories across Europe, the Middle East, and Africa. In June 2006, Nike CSC started receiving electricity from a 9-megawatt (MW) wind power park located on its premises, making it one of the largest corporate on-site wind power projects in Europe.

Wind power to achieve corporate climate targets

Nike CSC has long been proactive in its efforts to reduce the facility's footprint on the environment. Driven by the company's global commitment to reduce its carbon dioxide (CO₂) emissions 13 percent below 1998 levels by 2005, Nike CSC implemented a number of ambitious projects. Examples include fitting warehouse roofs with solar thermal water heaters and relighting the facility's work areas to improve energy efficiency.

To further reduce its emissions, Nike CSC decided to install on-site wind power turbines to supply emissions-free electricity for its facility. The company hired Arcadis, an environmental engineering and consulting firm, to conduct a feasibility study of the Laakdal site and assess the site's wind potential. Arcadis recommended that Nike CSC install six 1.5 MW wind turbines along the perimeter of the existing Laakdal industrial park.

Recognizing challenges

Several issues arose, however, during the project evaluation and development phases. One concern was that Nike's facility was very close to residential areas. Local residents were worried about presumed noise and visual impacts that the wind park would create. The company also was concerned about the sustainability of the wind park's design and the upfront capital expenditures needed to build the project.

Taking proactive steps

Nike CSC took several proactive steps to address these challenges. To address the aesthetic concerns of local residents, Nike CSC organized site visits to nearby wind farms for community members.

Residents were able to see firsthand a wind park's minimal visual impact and hear how quietly modern wind turbines operate. Involving the community early in the project evaluation phase helped Nike CSC assuage community fears and build support.

To address concerns about the sustainability of the wind park's design, Arcadis proposed the use of lattice towers rather than the more common tubular steel masts to support each turbine. According to Arcadis, lattice towers presented a more environmentally friendly and sustainable design solution since they use 60 percent less steel than traditional masts and could be easily deconstructed and recycled. In addition, lattice towers can reduce blade noise.

To address cost concerns, Nike CSC partnered with Seeba—a construction company and independent power producer—to finance, build, operate, and maintain the Laakdal wind park. As a result, Nike CSC did not need to finance the capital costs or assume responsibility for operating the turbines. Nike CSC negotiated a medium-term contract for fixed-priced wind power with Seeba. This contract helps Nike hedge its electricity costs against fluctuations in fossil-fired electricity prices. In addition, Nike CSC leases the land on which the turbines are located to Seeba. The lease payments help make the power purchase agreement at least cost-neutral relative to conventional power contracts.

Becoming a reality

The Laakdal 9 MW wind park, with its 111 meter tall towers (at the turbine's hub), became operational in June 2006. It is capable of generating 22 million kilowatt-hours of green power annually, enough electricity to meet the demands of approximately 4,700 European households. This is one of the largest corporate on-site wind power projects in Europe and makes Nike CSC one of the first European corporate facilities of its size to be powered by 100 percent green electricity. By identifying potential barriers early on and structuring the project in a way that allowed the company to mitigate potential risks, Nike CSC ensured the successful implementation of the project and its contribution toward the company's global carbon dioxide emissions reduction goal.

Stabilize corporate energy costs

Some companies switch to renewable resources in order to hedge their energy costs against volatile fossil fuel prices. In 2001, for instance, Austrian ski and tennis equipment manufacturer Fischer GmbH had a biomass “tri-generation” plant installed at its facility in Ried, Austria. The plant simultaneously provides electricity, heat, and cooling by combining a cogeneration system with absorption cooling units. Fischer signed a 15-year contract with Scharoplan GmbH, which owns and operates the plant, for all three forms of energy at

fixed prices that are competitive with prevailing market rates as well as 100% cover against outages.¹

Solar power, as well, can stabilize corporate electricity costs. Ford's engine plant in Bridgend, United Kingdom, for instance, incorporates 26 solar photovoltaic (PV) panels into its roof. Opaque, large-area PV laminates were built into the south-facing side of the skylight, while the north-facing side provides natural daylight for the building.² The installation helps hedge part of the engine plant's electricity costs. With every kilowatt-hour that the solar PV system generates, Ford

avoids having to purchase power from its utility and being exposed to fluctuating retail electricity rates. The system is also grid-connected, allowing Ford to sell any excess generation back to the utility.³

Some companies switch to renewable resources in order to hedge their energy costs against volatile fossil fuel prices.

Renewable energy is more likely to offer corporate energy users a hedge value in situations where:

- The wholesale prices of the key primary fuels that generate power (e.g., natural gas) fluctuate relatively frequently.
- The price changes in these primary fuels are passed on to end users and adjusted frequently.
- The corporate end user is able to sign long-term fixed-price power contracts or has installed an on-site power generation system.⁴

Location, location, location

It is important to note that renewable energy projects are a bit like real estate. Three of the most important factors that determine whether or not a project is economically attractive are based on “location, location, location,” namely:

- The availability and quality of renewable *resources* at the corporate location, such as the amount of biomass feedstocks from nearby sources, average annual wind speeds, or annual solar insolation.
- The availability, amount, and type of government economic *incentives* for renewable energy projects. In some situations, economic incentives can be a more significant factor than the availability of renewable resources. For example, as a result of attractive incentives for solar systems, Germany accounts for more than 80 percent of the installed capacity of solar photovoltaic systems in Europe in spite of the fact that it receives much less sunlight than countries like Spain and Italy. Incentives for renewable energy purchases and projects can take many forms, including avoidance of the climate change levy in the U.K., rebates on capital investments, and guaranteed feed-in tariffs in several European countries. A list of renewable energy incentives by country can be found at

www.thegreenpowergroup.org/eu/policies.html or at <http://www.iea.org/textbase/pamsdb/grindex.aspx>.

- The retail *price of electricity or natural gas* currently being paid by the corporate facility. On average, renewable energy purchases or projects will be more economically attractive at locations with high conventional energy prices.

IV. REDUCE EMISSIONS

Another business rationale for using renewable energy is to reduce corporate emissions of greenhouse gases, as well as emissions of airborne pollutants, including sulfur dioxide (SO₂), nitrogen oxides (NO_x), and particulate matter (PM).

Switching from using fossil fuels to renewable resources can be an attractive strategy for a company to lower its “direct” and “indirect” greenhouse gas (GHG) emissions. Direct GHG emissions are those from sources that are owned or controlled by the company, such as emissions from the on-site generation of electricity, heat, or steam. For example, a DuPont manufacturing plant in Uentrop, Germany, replaced natural gas boilers with a biomass cogeneration system and thereby decreased its direct emissions of CO₂. By co-firing biomass with coal at its Lynemouth smelter in the United Kingdom, aluminum manufacturer Alcan reduced the site’s CO₂ emissions relative to burning 100 percent coal at the facility. Cement manufacturer Holcim reduces CO₂ emissions at several of its kilns when it combusts biomass instead of fossil-based fuels.

Switching from using fossil fuels to renewable resources can be an attractive strategy for a company to lower its “direct” and “indirect” greenhouse gas (GHG) emissions.

Indirect GHG emissions are those that are a consequence of the company’s activities but that occur from sources owned or controlled by another entity. They include emissions associated with the generation of purchased electricity, heat, or steam. For example, packaging material manufacturer Tetra Pak reduced its indirect GHG emissions by switching from fossil-fired electricity to green power supplied by its retail electricity providers in the Netherlands and Germany (*Box*

In 2005, Tetra Pak, an international manufacturer of packaging material, established a goal to reduce the company's global greenhouse gas emissions 10 percent below 2005 levels by 2010. Given projected growth in Tetra Pak's business, this absolute emissions reduction target implies that the company will need to cut its emissions intensity by approximately one-third by 2010 relative to a "business-as-usual" scenario.

To achieve this goal, the company is pursuing a number of energy efficiency measures and green power purchases. The energy efficiency projects will reduce corporate greenhouse gas emissions while saving money at the same time. However, the greatest contribution will come from switching to green power—electricity generated by renewable resources such as hydro, wind, solar, and biomass. With its ambitious target and action plan, Tetra Pak qualified for the WWF Climate Savers^a program, the first Swedish company to do so.

Tetra Pak took its first steps in early 2006. Working with power supplier Nuon, the company switched from purchasing conventionally generated electricity to green power in the Netherlands. The contract, which is for 28 million kilowatt-hours per year of electricity from hydro, biomass, and wind energy, will supply 100 percent of the power consumed by Tetra Pak's Dutch factory at a premium of less than 5 percent.

In addition, the company has agreed to purchase 76 million kilowatt-hours of green power per year by 2008 from NaturEnergie for its German factories. Both green power deals dramatically reduce Tetra Pak's "indirect" greenhouse gas emissions—those emissions associ-

ated with the generation of purchased electricity. Additional green power contracts include a Tetra Pak processing equipment site in Denmark, which will buy 50 percent of its supply from wind power, and the Swedish market company office, which has used green power since 2003.

Tetra Pak is evaluating additional opportunities to purchase green power in Spain, the United States, and elsewhere. However, the company is not pursuing just any type of green power. Rather, in Europe it prefers to buy green electricity that meets the requirements of the Eugene Standard (a set of criteria established by the independent European Green Electricity Network)^b where possible. When Tetra Pak buys green power that meets the Eugene Standard, the company is assured that it is supporting renewable electricity from generation facilities that are new, that are additional to those receiving significant government support, and that have been independently verified as using publicly accepted "green" resources. Therefore, the company is helping build new renewable electricity capacity in Europe.

Using green power is proving to be an attractive approach for Tetra Pak to reduce its corporate greenhouse gas emissions. Requesting that the power meet the Eugene Standard ensures that the green power purchase is making a difference.

a. For more information about WWF's Climate Savers program, see <http://www.worldwildlife.org/climate/projects/climateSavers.cfm>.

b. For more information about the Eugene Standard, see <http://www.eugenestandard.org/>.

4). Johnson & Johnson, IKEA, InterfaceFLOR, and others have likewise reduced their indirect GHG emissions by purchasing green power instead of conventional power from their utilities in Europe.

Johnson & Johnson, IKEA, InterfaceFLOR, and others have reduced their indirect GHG emissions by purchasing green power instead of conventional power from their utilities in Europe.

Because of its impact on direct GHG emissions, renewable energy can be an attractive emissions reduction strategy for corporate facilities that are capped under the EU Emissions Trading Scheme. Because of its impact on direct and indirect GHG emissions, using renewable energy can be

an effective means for a company to meet voluntary GHG emissions targets.

Greenhouse gas emissions reductions, however, are often not ends in themselves. Rather, the goal is to improve the corporation's operating margins. When regulated, emissions effectively become monetized; emitters incur costs in the form of emissions allowance or credit costs, pollution taxes, emissions control equipment expenses, or other mechanisms, depending on the country. Renewable energy can lower these emissions-related operating costs by reducing emissions, a financial impact that is readily quantifiable.

Switching to renewable energy also can help companies lower their emissions of regulated pollutants besides CO₂. In order to satisfy local air quality regulations, some companies may want to cut the amount of sulfur dioxide, nitrogen

oxides, and particulate matter released from their manufacturing facilities. For these firms, switching from fossil fuels to renewable resources may be an attractive option. Converting an industrial boiler from using coal to biomass, for example, or co-firing biomass together with coal can reduce a facility's SO₂, NO_x, and PM emissions.⁵

V. STRENGTHEN STAKEHOLDER RELATIONSHIPS

Using renewable energy can strengthen a company's relationships with its various stakeholders, including customers, local communities, employees, and shareholders.

Customers and brand

Some companies seek to differentiate their brands from those of competitors by being recognized as "green" or as environmentally responsible corporate citizens. Using renewable energy is one such way to enhance a corporate or brand image. Many companies have successfully pursued this strategy. The Body Shop, for instance, has further strengthened its corporate identity as a leader in environmental performance by switching its U.K. facilities to green power (Box 5). By converting to green power for 100 percent of its electricity use, all-natural medicine and cosmetic manufacturer Weleda AG has sought to further align itself with the values of its customer base, health-conscious and environmentally concerned consumers.⁶

Using renewable energy can strengthen a company's relationships with its various stakeholders, including customers, local communities, employees, and shareholders.

The importance of brands, and thus the possible business benefits of using renewable energy, should not be underestimated. Brand value, internal corporate know-how, and other intangibles comprise approximately two-thirds of the market capitalization of the FTSE 100, according to a study conducted by Interbrand and Citibank. Of these intangibles, brand alone accounted for an average of 37 percent of a company's market capitalization.⁷ Changes in brand image therefore can significantly impact a company's market value. Improving performance along corporate social responsibility (CSR) parameters is a strategy for strengthening one's

Box 5

The Body Shop: Strengthening its Brand and Consumer Relationships Through Green Power

By switching to green power, The Body Shop—an international cosmetics retailer—has enhanced its corporate image as a sustainable company and thereby further differentiated its brand from that of competitors.

The Body Shop's first milestone in burnishing its environmental image came in 1993, when the company invested in a 15 percent stake in the Bryn Titli wind farm in Wales to help offset electricity used by its U.K. operations. Then in 2000, the Body Shop's international service center, its U.K. regional offices, and 100 company stores all switched to wind power. The company's key manufacturers, COSI, also converted to wind power at the same time.

The Body Shop communicates its green power purchases via advertisements, on its website, and through in-store posters and leaflets. Further strengthening its brand, the company leverages its renewable energy commitment to encourage customers to purchase green power themselves and to sign petitions for increased government support for clean energy technologies.

a. For more information, see http://www.thebodyshopinternational.com/web/tb-sgl/values_pop_campaign.jsp

brand. In fact, according to a recent study, CSR "accounts for over 25 percent of [corporate] image and reputation impact on customer satisfaction."⁸

Not surprisingly, using renewable energy to strengthen a corporate brand has been a business case more common among companies in business-to-consumer industries than for business-to-business firms. But this is beginning to change. Some business-to-business suppliers of goods and services increasingly will need to respond to emerging demands being made by their corporate customers. Wal-Mart, for instance, is starting to leverage its considerable clout to encourage its suppliers to improve their own efficiency and environmental performance.⁹

Local communities

On-site renewable energy generation systems can establish a company as a responsible neighbor in local communities. For example, Czech wood-products company Neva installed a 2.5 MW biomass heating system at its site in Kardasova Recice. The biomass project improved the town's environmental quality by enabling Kardasova Recice to close its

Box 6**From Barcelona to Merton:
Municipal Renewable Energy
Requirements for New Buildings**

As communities become more concerned about climate change, municipal governments such as those of Barcelona, Spain and Merton, U.K. have begun to mandate on-site renewable energy in new and refurbished buildings.

In 2000, Barcelona became the first Spanish municipality to adopt a passive solar ordinance. By requiring new non-residential buildings with hot water consumption over 2000 liters to heat 60 percent of water through on-site solar panels, the law has created a strong business case for the use of renewable energy. Within four years, over 35 Spanish municipalities had passed similar ordinances, further emphasizing the need for businesses to evaluate green energy in their expansion plans.^a

The London Borough of Merton began a similar wave of reform in October 2003 with the adoption of its Unitary Development Plan. The plan included a statement that “all new non-residential developments above a threshold of 1,000 square meters will be expected to incorporate renewable energy production equipment to provide at least 10 percent of predicted energy requirements.”^b By making municipal planning consent for new constructions contingent on the use of renewable energy, Merton has pressed the adoption of such technologies on corporations.

The “Merton Rule” has now been adopted in 19 British Boroughs and is being considered in dozens of others.^c If such policies continue to spread, a company’s revenue growth and license to operate could be inextricably linked to the use of on-site green energy.

- a. For more information, see Pamela Stürzaker, “Spain’s Chain Reaction - Municipal Obligations Spur on Solar Thermal Growth.” *Renewable Energy World*. Available at: http://xj.base10.ws/magsandj/rew/2004_05/chain_reaction.html.
- b. For more information about Merton’s 10 percent renewable energy policy, see <http://www.merton.gov.uk/living/planning/plansandprojects/10percentpolicy.htm>.
- c. To see which British boroughs have instituted or are looking to introduce similar policies, see <http://themertonrule.org/map>.

municipal coal heating plant, which generated significant amounts of local air pollution. As a result, the biomass system helped the municipality meet the Czech Clean Air Act emissions reduction requirements cost effectively while simultaneously meeting the heating needs of the town.¹⁰ The project also helped reduce the amount of local truck traffic hauling wood wastes.

In some cases, efforts to improve community relations through on-site renewable energy projects are no longer voluntary. For example, several European communities have

pressed businesses to incorporate renewable energy installations into new commercial buildings (Box 6).

Employees

Using green power also may enhance a corporation’s relations with its employees, an important audience for corporate management. A recent KPMG survey of 1,600 of the world’s largest companies in 16 industrialized countries found that approximately half believed employee motivation was a major driver of CSR activities.¹¹ Other commentators have observed that many employees want to work for firms that have a mission beyond just increasing shareholder value.¹² In other words, CSR activities can help a company attract, motivate, and retain good employees and thereby succeed in the “war for talent.”

Using green power also may enhance a corporation’s relations with its employees, an important audience for corporate management.

Switching to renewable energy is one element of a successful CSR strategy. For instance, Johnson & Johnson’s commitment to using renewable energy at its facilities in Europe, North America, and elsewhere substantiates corporate values that are important not only to its customers but also to current and prospective employees.

Shareholders

Renewable energy can help strengthen a company’s standing with shareholders, especially at a time when many institutional investors are becoming increasingly concerned about corporate financial and regulatory exposure to existing and future climate change policies.

Several recent developments illustrate this increased concern. One is the emergence of the Carbon Disclosure Project,¹³ a collaboration of 225 institutional investors representing over \$31 trillion in assets. The CDP conducts an annual survey of the world’s largest companies, collecting data on their greenhouse gas emissions, recording this information into a registry, and posting it on the internet. Many financial institutions such as Deutsche Bank now examine a company’s exposure to climate change policies and impacts when evaluating loans. Likewise, several leading pension funds

and asset managers collaborate in the Institutional Investors Group on Climate Change (IIGCC) to encourage companies in which they invest to assess and manage any material risks and opportunities to their businesses from climate change and the shift to a lower carbon economy. The IIGCC has 31 members with over €2.7 trillion in assets.¹⁴

Switching to renewable energy is one way that a company can signal that it is managing its greenhouse gas emissions and, therefore, its climate-related risk.

Switching to renewable energy is one way that a company can signal to these and other institutional investors that it is managing its greenhouse gas emissions and, therefore, its climate-related risk. Furthermore, some investors interpret proactive environmental performance as an indication that corporate management has a forward-looking strategy and runs a tight ship. Research by investment research and advisory firm Innovest, for example, has shown a correlation between environmental performance and financial performance.¹⁵

VI. SUMMARY

Many corporations in Europe are increasing their use of renewable energy to meet some or all of their energy needs. These companies are switching to renewables to obtain a variety of business benefits, including:

- Lower or stabilized energy costs
- Reduced emissions
- Stronger stakeholder relationships.

Each of these business cases directly or indirectly links renewable energy use to better margins and operating performance. As a result, opportunities exist for firms to conduct business in an economically *and* environmentally sustainable manner.

This publication is the eighth installment of the *Corporate Guide to Green Power Markets* series, which is based on WRI's experiences with the Green Power Market Development Group. Previous installments are:

1. *Introducing Green Power for Corporate Markets: Business Case, Challenges, and Steps Forward*
2. *Opportunities with Landfill Gas*
3. *Corporate Greenhouse Gas Emissions Inventories: Accounting for the Climate Benefits of Green Power*
4. *Introducing the Green Power Analysis Tool*
5. *Renewable Energy Certificates: An Attractive Means for Corporate Customers to Purchase Renewable Energy*
6. *Developing "Next Generation" Green Power Products for Corporate Markets in North America*
7. *The Business Case for Using Renewable Energy (United States)*

Each of these *Corporate Guides* can be found at <http://www.thegreenpowergroup.org/publications.cfm?loc=eu>.

ABOUT THE AUTHORS

Craig Hanson is a Senior Associate with WRI's Climate, Energy, and Pollution Program.

Diana Profir manages the Green Power Market Development Group-Europe. She can be contacted at DProfir@wri.org or at +44 (0)207 960 2988.

ACKNOWLEDGMENTS

The authors are grateful to Alex Fay, Robert Heilmayr, Daniel MacNeil, and Michael Obeiter for research conducted for this publication. They thank Eddie Bingham of InterfaceFLOR and John Harris of IKEA, as well as Rob Bradley, Dr. David Jhirad, and Remi Moncel of the World Resources Institute for comments on early drafts. In addition, the authors are grateful to Hyacinth Billings, Jennie Hommel, and Maggie Powell for turning the draft paper into a finished publication.

The authors thank the members of the Green Power Market Development Group, The Climate Group, and all those who have supported the Green Power Market Development Group-Europe over the past two years, including the Oak Foundation and the Rockefeller Brothers Fund.

In addition, the authors thank the many renewable energy providers and project developers with whom the Group has engaged.

The authors alone are responsible for the views and perspectives expressed in this publication.

NOTES

1. Commission of the European Communities Directorate-General for Energy and Transport. 2002. *Best Practice Examples*. Available online at: http://www.esv.or.at/esv/fileadmin/esv_files/Projekte/Best_Practice_ESV_Fischer_2.pdf.
2. European Commission. 2000. *Photovoltaic Solar Energy Best Practice Stories*. Available online at: http://ec.europa.eu/energy/res/sectors/doc/photovoltaic/solar_energy_best_practice.pdf.
3. Ford Motor Company Limited. 2001. *Architecturally Integrated PV System at the Ford Bridgend Engine Plant*. Available online at: <http://www.dti.gov.uk/files/file16524.pdf?pubpdfload=01%2F625>.
4. For more information about conditions under which green electricity can serve as a hedge, see A. Aulisi and C. Hanson. 2004. *Developing "Next Generation" Green Power Products for Corporate Markets in North America*. Washington, DC: World Resources Institute.
5. Bain, R. 2002. *Biopower Technical Assessment*. Golden, CO: National Renewable Energy Laboratory.
6. Earth Policy Institute. April 2, 2002. *Green Power Purchases Growing by Leaps and Bounds*. Available online at: <http://www.earth-policy.org/Updates/Update9.htm>.
7. Interbrand Corporation. 2001. *FASB Statements No. 141 & 142: The Impact on Intangible Assets, Including Brands*. Available online at: <http://www.handyrandy.com/pdf/brand/FASB141-142.pdf>.
8. CSR Europe. *Facts and Figures*. Available online at: http://www.csreurope.org/aboutus/CSRfactsandfigures_page397.aspx.
9. Wal-Mart. *Standards for Supplier: Supplier's Responsibilities*. Available online at: <http://walmartstores.com/Files/SupplierStandards.pdf>.
10. International Network for Sustainable Energy. *Biomass Heating for the Town of Kardasova Recice, the Czech Republic*. Available online at: <http://www.zpok.hu/inforse/30.html>.
11. KPMG Global Sustainability Services. 2005. *KPMG International Survey of Corporate Responsibility Reporting 2005*. Available online at: http://www.kpmg.com/Rut2000_prod/Documents/9/Survey2005.pdf.
12. Friedman, T. 2005. *The World is Flat: A Brief History of the Twenty-first Century*. New York: Farrar, Straus & Giroux.
13. See www.cdproject.net for more information.
14. IIGCC correspondence. 22 November 2006.
15. Innovest Group. 2004. *Corporate Environmental Governance*. Available online at: http://www.innovestgroup.com/pdfs/2004-11-09-Environmental_Governance.pdf.



The World Resources Institute is an environmental think tank that goes beyond research to find practical ways to protect the Earth and improve people's lives. Our mission is to move human society to live in ways that protect Earth's environment and its capacity to provide for the needs and aspirations of current and future generations.

Our program meets global challenges by using knowledge to catalyze public and private action:

- *To reverse damage to ecosystems.* We protect the capacity of ecosystems to sustain life and prosperity.
- *To expand participation in environmental decisions.* We collaborate with partners worldwide to increase people's access to information and influence over decisions about natural resources.
- *To avert dangerous climate change.* We promote public and private action to ensure a safe climate and sound world economy.
- *To increase prosperity while improving the environment.* We challenge the private sector to grow by improving environmental and community well-being.

WRI's Climate, Energy, and Pollution Program strives toward the achievement of WRI's climate goal: To protect the global climate system from further harm due to emissions of greenhouse gases and help humanity and the natural world adapt to unavoidable climate change. WRI believes that clear economic and development benefits must accompany measures to slow the use of fossil fuels and to manage land use in an environmentally protective manner.



THE °CLIMATE GROUP is an independent, non-profit organization dedicated to accelerating the international uptake of corporate and government best practice in emissions reductions. THE °CLIMATE GROUP has offices and charitable status in the UK, USA and Australia and operates internationally.

Proactive companies, states, regions and cities around the world are demonstrating that the cuts in greenhouse gases required to stop climate change can be achieved while growing the bottom line. Using the work of these leaders as a catalyst, THE °CLIMATE GROUP strives to accelerate international action on climate change with a new, strong focus on practical solutions.

Since launching in 2004, THE °CLIMATE GROUP has developed an interlocking program of sectoral leadership groups, research and publications, media engagement, and high-impact events. Its coalition of members has demonstrated that emissions reductions, while essential, can also be profitable. THE °CLIMATE GROUP inspires further action and outreach and mobilizes business and sub-national governments to implement and support effective strategies and policies that mitigate climate change.

THE °CLIMATE GROUP also promotes the development and sharing of expertise on how business and government can lead the way towards a low carbon economy while boosting profitability and competitiveness.

