Global Warming Solutions

An Introduction to the Topic

by Prabhu Dayal

This month, *EM* focuses on the "hot" topic of global warming with three articles that discuss some of the critical aspects of global climate change and both the opportunities and challenges it presents for U.S. and multinational companies. As all three articles illustrate, greenhouse gas (GHG) reduction strategies offer companies risk mitigation options and benefits of reduced costs through energy efficiency and technical innovation.

Global warming is once again on the public's radar. Both *Business Week* and *National Geographic* have dedicated recent issues to the topic. In the September 2004 *National Geographic,*[1] the authors give evidence of the negative effects of global warming, including increasing wildfires and eroding coastlines, glaciers melting as sea levels rise, and decreasing snow packs due to high altitude temperature spikes. The increase in the Earth's surface temperature is marked by the sharp rise in global temperatures since 1950. The 1990s, for example, was the warmest decade, and 1998 was the warmest year.[2] Additionally, over the past 140 years activities such as forest clearing and fossil-fuel burning have increased concentrations of carbon dioxide (CO_2) in the atmosphere by nearly 100 parts per million (ppm).

In the first in this series of *EM* articles, Douglas Muschett[3] outlines the evolution of global warming policy and debate from the early stages of the Kyoto Protocol to the drivers of today's global warming solutions, including emission trading and carbon sequestration projects. The next generation of sustainable carbon projects and the value of renewable energy in seeking global warming solutions are also presented.

In January, the European Union (EU) will impose mandatory caps to reduce CO_2 emissions and begin a market-based system for buying and selling the right to emit carbon, similar to the successful regulatory program perfected by the U.S. Environmental Protection Agency for reducing sulfur dioxide (SO_2) emissions. In the second article, Roed-Larsen[4] elaborates on the EU system for verification, certification, and trading of GHG credits, including aspects of Clean Development Mechanism (CDM) and Joint Implementation (JI) projects.

As this publication was going to press, the Russian parliament ratified the Kyoto Protocol, putting pressure on the United States to act. U.S. Senators John McCain (R-AZ) and Joseph Lieberman (D-CT) last year introduced a market-driven cap-and-trade scheme for trading allowances to reduce GHG emissions and reduce U.S. dependence upon foreign oil. The McCain–Lieberman Climate Stewardship Act (*S.139*) encourages multinational companies to make investments in energy-efficient and renewable energy technologies and ensure benefits from the trading of emissions allowances. This bill may provide U.S. companies affected by the Kyoto Protocol with a mechanism for meeting emission reductions and doing business overseas.

In the third article,[5] I provide illustrations of practical examples, using some of the concepts detailed in the other two articles, to illustrate ongoing projects in developing countries where renewable energy systems can help offset or reduce GHG emissions. Developing countries, burdened by the high costs of imported fuel oil, can benefit from small sustainable renewable energy systems to electrify rural off-grid villages, while reducing the use of fossil fuels and creating carbon credits and funding opportunities for poverty reduction and livelihood development. The feasibility and opportunities for the development of renewable energy projects are illustrated for the Philippines, the Maldives, Sri Lanka, Indonesia, and India.

The benefits to corporations that employ GHG reduction strategies can best be illustrated by three success stories assembled by the Climate Group[6]:

- BP reduced its GHG reductions by 18% in three years at an estimated cost of $20 million, but realized a savings of $650 million in the same period;
- the State of California estimates revenues of $500 million in state export sales generated by energy efficiency, renewable energy, and cogeneration technologies; and
- Dupont has saved a reported $2 billion through increased energy efficiency and $10–15 million annually through the use of renewable energy, while achieving a 67% reduction in GHG emissions since 1990.

The challenge is for corporations to adopt voluntary actions using renewable energy technologies to reduce overall GHG emissions, while providing benefits through trading of carbon emission reduction credits to help global climate mitigation, environmental conservation, and reduce the dependence on fossil energy and imported fuel oil.

REFERENCES

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5. Dayal, P. Rural Electrification in Developing Countries using Renewable Energy and Carbon Credits; *EM* **2004**, *November*, 25-29.
6. See The Climate Group. http://www.theclimategroup.org/tcg_lessmore.pdf.