



EDITOR

Jennifer L. Turner

MANAGING EDITOR

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ASSISTANT EDITORS

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COVER PHOTO

This front cover depicts the two “faces” of China’s energy supply—the blackened faces of the coalminers remind us of China’s still overwhelming (70+ percent) dependence on coal to fuel its booming economy. This coal burdens the country with heavy air pollution, degraded water, and the world’s highest rate of mining-related deaths. The wind farm is a “face” of the country’s green energy revolution, for over the past few years the Chinese government’s investments and subsidies into clean energy, as well as increasingly stringent requirements for energy efficiency, renewables and cleaner coal have created an explosion of solar PV and wind power manufacturing.

Photo Credit: Coal Miners - Keren Su/Getty Images; Wind mill farm - istock images

ABOVE PHOTO

Choke Point U.S.: Understanding the Tightening Conflict Between Energy and Water in the Era of Climate Change

BENZIE COUNTY, MICHIGAN, JULY 2010: One of the last wells drilled into Michigan’s Antrim Shale at sunrise. A new and deeper natural gas play appears to be unfolding as developers pay record amounts for oil and gas leases over Michigan’s Collingwood Shale. Drilling deep shales utilizes a practice called fracking that pumps millions of gallons of water and thousands of pounds of chemicals into wells under intense pressure to fracture the rock and release the gas. The rock-punishing practice has produced evidence of serious water contamination in several states, according to ProPublica, a nonprofit investigative news organization. The public concern is emblematic of the choke point that the United States is experiencing as rising energy demand comes into conflict with global climate change and declining reserves of clean fresh water. For more information see the Feature Box on Choke Point: U.S. (page 40), an initiative by Circle of Blue investigating the growing conflicts between energy development and water shortages in the United States. Photo © Heather Rousseau / Circle of Blue



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THE CHINA ENVIRONMENT FORUM

For thirteen years, the Woodrow Wilson Center's China Environment Forum (CEF) has implemented projects, workshops, and exchanges that bring together U.S., Chinese, and other Asian environmental policy experts to explore the most imperative environmental and sustainable development issues in China and to examine opportunities for business, governmental, and nongovernmental communities to collaboratively address these issues.

The networks built and knowledge gathered through meetings, publications, and research activities have established CEF as one of the most reliable sources for China-environment information and given CEF the capacity to undertake long-term and specialized projects on topics such as U.S.-China energy and climate network building, environmental justice, creating a Japan-U.S.-China water network, municipal financing for environmental infrastructure, river basin governance, environmental health, water conflict resolution mechanisms, food safety, and environmental activism and green journalism.

The China Environment Forum meetings, publications, and research exchanges over the past year have been supported by generous grants from the Rockefeller Brothers Fund, Blue Moon Fund, U.S. Agency for International Development, Vermont Law School, Western Kentucky University, World Resources Institute, and the ENVIRON Foundation. Jennifer L. Turner has directed the China Environment Forum since 1999 and her assistant Peter V. Marsters just celebrated his first year with CEF.

金木水火土 COMMENTARY

Corporate Environmentalism in China: An NGO – Corporate Partnership to Improve Energy Efficiency in Chinese SMEs

By Gwen Davidow

The World Environment Center (WEC) is an independent, nonprofit, non-advocacy organization whose mission is to advance sustainable development through the business strategies and operations of its member companies. In this capacity, WEC is in a unique position to work with corporate partners, governments, and other nonprofits to further both sustainable environmental and economic goals—a combination of mission and incentive that is exemplified in WEC's Greening the Supply Chain strategic initiative.

This Greening the Supply Chain initiative is one of WEC's keystone programs and is proving the significance of collaborating with industry and governments to achieve improved performance across global supply chains. This approach combines the purchasing power of large multinationals (incentivized by their own stakeholders to address their global footprint) with the market drivers of their supplier base, which continues to grow in developing nations, particularly China. Chinese businesses have been feeling the pinch as the Chinese government pushes energy efficiency and pollution control in its national and municipal environmental regulations and corporate customers increasingly use their purchasing power to demand better environmental performance. While the Chinese government has struggled to enforce its many clean energy and pollution control laws, pressure from global markets to demand more energy efficiency and less pollutions from suppliers has begun to "green" the production of some of the larger Chinese exporting industries. This

market-driven approach to green suppliers can trigger a domino effect of better environmental stewardship farther upstream in the production chain and influence the harder-to-reach small enterprises. With the potential of influencing the vast number of small Chinese suppliers, even small energy or pollution control improvements in operations and facilities can have a significant impact on protecting human health and energy security in China.

BUILDING A KEY PARTNERSHIP WITH SHANGHAI GENERAL MOTORS

Over the past five years, WEC has been fairly successful in building a large green supply chain (GSC) collaboration in China in partnership with Shanghai General Motors (Shanghai GM) and 127 of its suppliers. WEC and General Motors launched the GSC pilot project in 2005 with General Motors-China; Shanghai GM (a joint venture between GM and Shanghai Automotive Industry Corporation); the Society of Automotive Engineers- China; and a number of first-tier suppliers to GM-China. The success of the pilot project resulted in continued GSC projects carried out by WEC and Shanghai GM, working with a hand-picked group of 40 suppliers in 2008 and a total of 127 suppliers in 2009.

The project has since been incorporated in Shanghai GM's Drive to Green initiative, which promotes sustainable development throughout the company's national supply chain by working with suppliers to improve their manufacturing

processes by lowering consumption of raw materials and energy sources.

GSC Project Goals

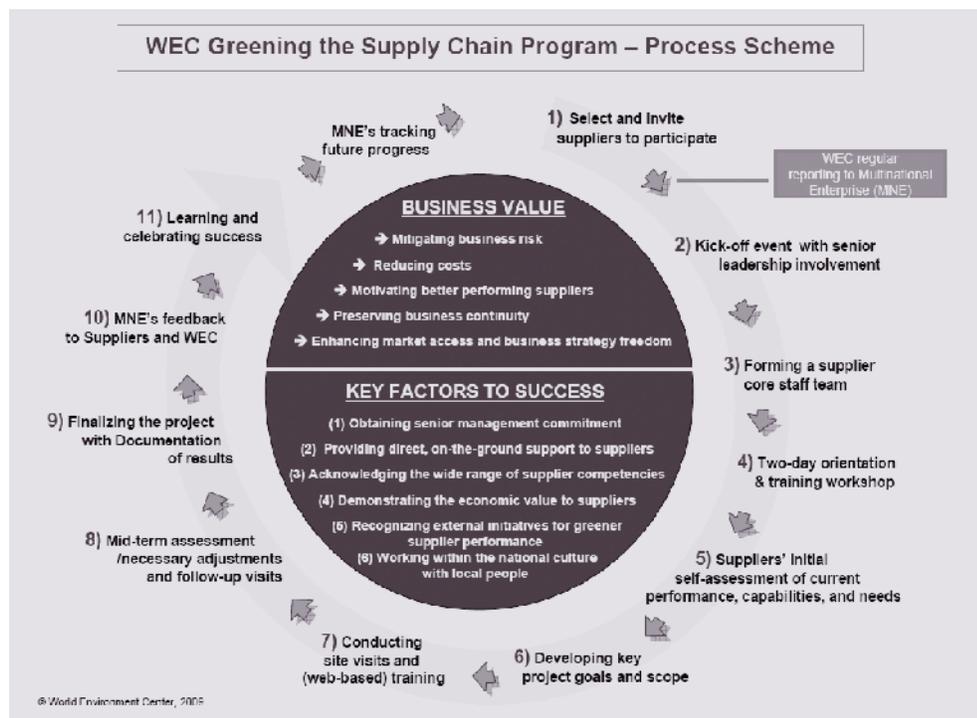
The GSC project in with Shanghai GM aims to enhance performance in small and medium enterprises (SMEs) in the areas of clean production and energy efficiency, while simultaneously creating economic results that will further motivate continued “green” improvement. Specifically, the processes and facilities for each SME are assessed to see where improvements can be made in health/safety practices, efficient use of energy and natural resources, reduction of emissions, and the impact of the company on its community. In achieving these goals, the suppliers are often able to maximize efficiencies, cut costs and increase savings—results that will incentivize the suppliers to not only continue the cycle of assessing and improving energy and environmental performance after the project is over, but also passing the lessons learned to their own suppliers.

Global corporations devote increasing

amount of attention to clean production in their supply chains, particularly in developing nations, because (1) the focus of concerns among stakeholders of corporate responsibility has changed to include the full value chain; (2) the countries where many companies operate continue to develop stronger policies to regulate industrial energy and environmental issues; and (3) these efforts with suppliers can serve to strengthen performance and benefit the corporation from more efficient suppliers.

Project Approach

The GSC project is a tool to address environmental and economic performance in SMEs through incentives and best practices. The incentives are spurred by the multinational corporation, usually a WEC member company, reaching out to a select group of suppliers to participate in a drive to improve manufacturing processes in their facilities by adopting cleaner production and energy efficient practices. These activities are funded either by a government entity or the corporation itself. The current GSC project in China is funded by Shanghai GM,



Source: World Environment Center

who works with WEC to approve the overall direction and provide access to the suppliers. It is Shanghai GM's initial responsibility to bring in the selected suppliers, choosing to work with those that are both willing and capable to commit to the full project term.

Once Shanghai GM selects a set of appropriate suppliers, WEC works with them to create timelines and deliverables, establish baselines, train staff in the supplier's company in the methodology, and draft action plans for cleaner production and energy efficiency goals. Shanghai GM's relationship with these suppliers and their visible support for this work is—and has been—pivotal to the project's success. Throughout this process, WEC consistently monitors supplier progress and communicates with Shanghai GM, among the suppliers, and with the local team. (See Figure 1).

As the project expands to new participating suppliers, the previous green suppliers carry on by applying the continuous improvement principles to a wider range of their practices and operations, thereby ensuring the greatest reach of the project among Shanghai GM suppliers.

ENVIRONMENTAL AND ECONOMIC RESULTS

In 2008, Shanghai GM announced that the progress made by the 40 suppliers involved in the second phase of the GSC project provided a total savings of 22 million Yuan (\$3.2 million) in one year in energy costs; over 18 million Yuan (\$2.6 million) in one year in raw material savings; reductions of over 6 million tons of solid waste and 4.3 million tons of waste gas, among other noteworthy achievements. At the completion of the third phase of the project in early 2010, the 79 newest participating suppliers undertook 187 projects that focus on cleaner production, material savings and production

efficiency, as well as 175 energy efficiency initiatives. The results of these projects provided a strong environmental and economic rationale for continuation of the GSC initiatives:

- Total annual cost savings of 69,910,000 Yuan (\$10.2 million) was realized with a total investment of about 48,758,000 Yuan (\$7.1 million);

One of the greatest project results has been the institutionalization of consistent energy and environmental monitoring efforts throughout Shanghai GM's supply chain.

- The average payback period for 78 percent of the cleaner production projects implemented was less than one year; and,
- Reductions of more than 36,700 tons per year of greenhouse gases;
- Annual reductions of 370,600 tons water usage; 7,600 tons of solid waste; and,
- Decrease in annual wastewater by 136,600 kiloliters.

One of the greatest project results has been the institutionalization of consistent energy and environmental monitoring efforts throughout Shanghai GM's supply chain. The next phase of the project was inaugurated in Shanghai in the summer of 2010 for 80 new suppliers, as the graduates from the program in past phases now focus on maintaining results through continuous improvement efforts.

KEY FACTORS TO SUCCESS

As summarized above, WEC's work with Shanghai GM has led to the participating SMEs to mitigate waste, improve air and water quality, and practice stronger public health and safety practices, all while increasing productivity and efficiency. There remains much more work to

do, but the successes thus far are attributed to four key factors:

Senior Leadership Commitment. Commitment is necessary from the senior levels of the multinational corporations, as is the communication of that commitment to their suppliers. The role of developing, customizing, implementing, measuring and managing the project is a joint effort between the WEC global team and the multinationals, but the primary role of the latter is to provide visible and consistent support of the activities throughout the project term. Equally important is the commitment from the executives of the participating suppliers. Their visible support is essential to encourage the in-house teams to devote the resources necessary for a successful project.

WEC's Local Team. WEC's local experts and partners are able to navigate cultural, language, and business issues that might otherwise present barriers. The local team, in conjunction with WEC global and Shanghai GM leadership, worked with the selected suppliers from initiation to understand each company's unique capacities and opportunities. Although WEC's activities and operations are global in scope, this

project and providing direct, on-site support to suppliers.

Actionable and Measurable Results. The action plans are customized to each supplier, using self-audits as a baseline, incorporating WEC technical guidance for process improvements, and measuring the improvements in terms of savings in energy, natural resources, waste and money. WEC trains the participants in this full process, from assessment to final results, providing tactical and strategic direction throughout the project term.

Communication. A consistent level of communication is imperative among the suppliers, WEC team, and SGM throughout the project. The suppliers provide baseline assessments, annual plans, and monthly reports to the WEC team, who then are able to collate the information into monthly progress reports for Shanghai GM.

INCENTIVES AND CHALLENGES FOR PARTICIPATING STAKEHOLDERS

The Chinese government has been very active in encouraging businesses to focus on reducing their environmental and energy footprints. While there are incentives for large and small enterprises to meet and even go beyond the government's goals, capacity and clear guidance on how to operate sustainably are often lacking in China, particularly within SMEs. Shanghai GM has been instrumental in guiding its suppliers through its "Drive to Green" initiative (under which the GSC project is managed), which establishes clear targets and capacity building to promote greener growth.

Even if SMEs do not take government goals into account, becoming part of a greener supply chain provides a focus on processes that create more efficient production systems, greater savings, and a reduction of resource usage and waste. So while the incentives might initially be regulatory, companies will take more action



SGM Senior Executives, WEC Team members, and Suppliers on stage at a 2008 Green Supply Chain Recognition Ceremony in Shanghai
Photo Credit: World Environment Center

when green business practices help promote economic savings.

Challenges for Participants

In addition to China, over the past eight years, the World Environment Center has implemented “Green Supply Chain” projects in Australia, Brazil, El Salvador, Guatemala, Mexico, and Romania through a combination of government and corporate funding. In the course of this work, WEC has discovered many challenges that suppliers face in participating in GSC projects. The challenges summarized below highlight the kinds of challenges suppliers face in trying to green supply chains.

Competing Priorities. It can be challenging to integrate the GSC project into the business operations of SMEs when there already are competing priorities for the financial and human resources of the company. WEC addressed this in China by emphasizing the support and expectations of Shanghai GM’s senior management; clarifying the role of WEC and the on-the-ground team (not to scrutinize, but rather to evaluate and assist); and enlisting the buy-in of the senior levels of the suppliers.

Credibility. There might be an initial concern that GSC is a way for the corporate customer—or possibly the government—to impose greater scrutiny on a supplier’s operations. As a nonprofit, mission-based organization, WEC’s management of the project provides an unbiased margin between supplier and customer.

Project Expansion. As the project continues to succeed, WEC has focused on the challenge of the costs associated with managing the growing number of participants. One of the solutions has been relying on web-enabled communication: a member-only site for participating suppliers to centrally post their reports, plans, and results so that the local experts and administrators can review and collate en masse. The web solution continues to evolve as the project does, and is expected to be one of the strongest cost

equalizers WEC will employ.

FINAL THOUGHTS

In the three-plus years that WEC has worked on the Greening Supply Chain project in China with local partners and Shanghai GM, the team has found ample opportunity to discern the factors that strengthen the project, and to underscore key lessons learned. The key success factors—local, on-the-ground implementation; senior-level buy-in from both the suppliers and the corporate customer; measurable goals; and consistent communication—apply to this project across the globe. As do the lessons learned, such as:

- Results are maximized when the stakeholders with vested interest can assume a level of economic incentives, whether it be the continued loyalty of their customer base (Shanghai GM, in this case); the potential for greater returns and savings garnered from better practices; or the creation of efficiencies in the process;
- These activities can be applied successfully in parallel with government mandates, and indeed be strengthened by them; and,
- Management by a mission-driven NGO is necessary to assure participants that, although the results do tend to provide economic benefits, the underlying purpose is always a drive toward cleaner production and energy efficiencies.

The strength of this project relies on WEC’s team taking these lessons and threading them through the next iterations, in China and elsewhere.

In her current capacity as Global Director of Corporate Programs for WEC, Ms. Davidow manages several membership-based projects, such as the Greening the Supply Chain initiatives in Shanghai and Australia, and government-funded projects in Central America. She can be contacted at gdauidow@wec.org.