

Overview of World Environment Center Capacity Building Projects

Country	Project	Summary	Results
CHINA	Greening the Supply Chain with SGM-Wuling Funded by GM, SGM and SGM-Wuling 4 th Quarter 2012 –4 th Quarter 2013	This project is underway as a pilot project with five suppliers in Wuling, China, and is expected to be completed by the end of 2013.	Forthcoming
CHINA	Greening the Supply Chain with Shanghai General Motors Funded by GM and SGM March 2011—December 2011	The 2011 project involved 70 Tier 1 suppliers that make a variety of automobile products and parts for SGM-produced automobiles in China's domestic market. This project was implemented in partnership with the China Eco-efficiency Research Center (CERC), technical experts in auditing, clean production, and energy efficiency in the private sector.	<ul style="list-style-type: none"> • Reduction of over 205,600 tons of water among participating suppliers. • Decreased >26 million kW/hours of energy use. • Eliminated >31,000 tons of greenhouse gas emissions. • Reduced raw material costs per unit of output. • Improved cycle time and the ability to be more responsive to customer needs.
CHINA	Greening the Supply Chain with Shanghai General Motors Funded by GM and SGM July 2010—June 2011	WEC's China project rapidly grew into the larger "Drive to Green" initiative with SGM, working with 125 major suppliers by 2010. The goals of the program were to: <ul style="list-style-type: none"> • Achieve SGM supplier manufacturing and operational benefits while improving environmental performance and efficiencies in energy and other resources. • Cultivate a culture of continuous improvement and environmental responsibility among SGM suppliers. • Improve the competitive performance and position of participating suppliers by achieving cost reductions and other performance measures 	<ul style="list-style-type: none"> • Total investment was 144,022,000 RMB (\$US 21.9 million). • The total annualized savings for the first year - 130,647,000 RMB (\$US 19.9 million). • Electricity saved: 80,835,000 kWh/a • Fuel saved (Coal and Diesel): over 9,000 t/a • Water saved: 1,070,700 t/a • Solid waste avoided: 9,300 t/a • Liquid Waste avoided: 137,000 Kl/a • GHG emissions reduced: 55,400t
CHINA	Greening the Supply Chain with GM, Shanghai General Motors and SAE-China Funded by GM, SGM and SAE-China November 2005 – June 2007	In 2005, WEC launched a pilot project in China with General Motors-China, Shanghai General Motors (SGM), the Society of Automotive Engineers-China (SAE-China) and eight first-tier suppliers to GM-China. After a short training course in 2006, the suppliers began searching for and evaluating opportunities to save money, improve quality and reduce environmental impacts.	<ul style="list-style-type: none"> • Net savings of over \$250,000 USD • Over 2,100 Tons of CO2 emissions avoided • Over 65,000,000 gallons of water saved • 38% reduction in VOC concentration in one plant
EGYPT	USAID Trade Facilitation Project (Prime contractor: Nathan Associates) Total Funding: \$127,184 Funded by U.S. Agency for International Development April 2012- September 2015	The project team will provide targeted technical assistance to member companies through a combination of technical guidance, best practices resources, training workshops on the issues and techniques pertinent to their cleaner production/energy efficiency goals- based on available resources.	<p>Expected results:</p> <ul style="list-style-type: none"> • Reduced energy consumption in food processing and possibly textile sectors • Expanded application of cleaner production and energy efficiency techniques among local SMEs

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	<p>Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Peru: Cleaner Production Private Sector Partnerships (Government Grant S- LMAQM-10-CA-310-GD) August 2012- August 2015 Total Funding: \$576,5999 Funder – US Department of State</p>		
	<p>Support the U.S. Department of State by working with Higher Education for Development (HED) to further Pathways to Prosperity goals through their initiative Pathways to Cleaner Production. WEC will provide students at partner Latin American universities the opportunity to participate in practical internships as part of coursework, and assist MSMEs in cleaner production and more efficient usage of vital materials and processes in their production facilities, especially energy, water, and raw materials. WEC will support universities in the curricula and training courses on cleaner production and energy efficiency (CP/EE).</p>	<p>Expected results:</p> <ul style="list-style-type: none"> • Increased resource efficiency in the private sector and reduced consumption of materials, energy and water • Economic savings and increased competitiveness for partner MSMEs through their implementation of new technologies and improved practices • Expanded application of Cleaner Production and Energy Efficiency techniques among local MSMEs • Greater job opportunities for students as they enhance their skill set and build relationships with local cleaner production centers and businesses • A channel for student exchange among nations to share best practices and continue developing activities and programs after the project term completion and a network among industry and academia to provide continuously updated material 	
	<p>Morocco: Cleaner Production and Environmental Technologies: Promoting Green Growth through Private Sector Partnerships (Government Grant OES-OTE-2012000021) August 2012 –March 2015 Total Funding: \$385,785 Funder – US Department of State</p>		
	<p>The goal of the project is to achieve environmentally sustainable and socially inclusive economic growth in Morocco through increasing private sector adoption of environmental technologies and cleaner production practices in local small and medium sized enterprises (SMEs). WEC will access and train local SMEs, provide recommended practices and technology to improve their operations, monitor and report on improvements and challenges, build institutional capacity, and publicize the project activities and successes.</p>	<p>Expected results:</p> <ul style="list-style-type: none"> • Greater private sector use of environmental technologies and cleaner production practices; • Quantifiable environmental results in energy and water usage, resource consumption, and reduction in greenhouse gases and other forms of pollution; • Increased opportunities for youth and women; • Economic growth in Morocco that will allow for greater market access by U.S. products. 	
	<p>Morocco and Chile: Cleaner Production Private Sector Partnerships (Government Grant S-OES-10-RFA-0010) October 2010- September 2013 Total Funding: \$940,499 Funder – US Department of State Purpose: Support the U.S. Department of State in Morocco and Chile to expand the sustainability commitments of participating companies by reducing energy and</p>		

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	water consumption, minimizing waste and raw material usage, and lowering operating costs.		
MOROCCO		WEC is partnering with the Moroccan Cleaner Production Center and the country's leading national business association, Confederation General des Enterprise du Maroc (CGEM) to provide technical expertise to SMEs within Morocco's food processing sector within the association FICOPAM -- Federation des Industries de la Conserve des Produits Agricoles.	<ul style="list-style-type: none"> Expanded scope of project from 13 companies to 18 376 action plans developed (incl 142 in electricity) Savings in Moroccan 18 SME's: <ul style="list-style-type: none"> -123,052 m³ water use (against baseline: 7%/year) -926 t fuels (against baseline: 7%/year) -1,050,391 kWh electricity (against baseline: 2%/year) -3675 tons Greenhouse Gas Emiss. (against bas.:4%/yr) -53 tons of solid waste generation (against bas.:6%/yr) -104,222 m³ wastewater generation (against bas.:7%/yr) 45 roundtable participants 24 SME representatives trained in CP/EE policies, of which 11 were women ROI: 1 year (1.1 Mio\$ invested by 18 SME's)
CHILE		WEC has partnered with Chileoliva, Chile's national industry association for the olive and olive oil production sectors.	<p>Savings in 11 Chilean partner SMEs:</p> <ul style="list-style-type: none"> 518,800 kWh/yr of energy 1,239,180 gal/yr of water 697.5 tons/yr of waste 197.86 tons/yr of CO₂ 710 tons/yr of material production 4,690 m³/yr of waste water
Honduras: Cleaner Production Private Sector Partnerships (Government Grant S- LMAQM-10-CA-310-GD) August 2011- September 2013 Total Funding: \$247,500 Funder – US Department of State			
HONDURAS	Increase cleaner production and energy efficiency (CP/EE) practices and technologies in Honduras through providing technical assistance to participating SMEs to develop and implement CP/EE action plans, creating partnerships with large corporation(s) and/or industrial sector association(s) to mobilize resources and encourage SMEs participation, and 3) disseminate project results and CP/EE best practices through roundtables and publications in various communication outlets.		<ul style="list-style-type: none"> Project launched on March 1 in San Pedro Sula 12 agreements established with SMEs 2 MOUs signed with exporter and poultry associations 25 people trained in first training workshops on CP/EE policies, strategies, skills, and techniques Established project advisory board
Costa Rica and Nicaragua: Cleaner Production Private Sector Partnership (Government Grant S-LMAQM-09-GR-315) October 2009 – September 2011 Total Funding: \$495,000 Funder – US Department of State Purpose: As part of the CAFTA-DR's Private Sector Environmental Performance Program, the Department of State's Oceans, Environment and Science Bureau (OES) and the World Environment Center (WEC) initiated the CPP two-year Project in October 2009. The project provided on-the-ground support to 16 businesses in Costa Rica and 11 in Nicaragua to improve environmental performance, reduce costs, and improve efficiency and competitiveness through the adoption of cleaner production (CP) and energy efficiency (EE) practices and technologies.			

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COSTA RICA		<p>Three Costa Rican partnerships consisted of two supply chain initiatives and one sector partnership:</p> <ul style="list-style-type: none"> - Greening the Coca-Cola Company & Coca-Cola/FEMSA supply chain - Greening the Marriott Hotels supply chain; and - Partnership with SMEs from the food processor sector <p>Their participation garnered operational savings totaling over \$273,017 just over the life of the project, and investments of \$417,106.</p>	<ul style="list-style-type: none"> • Product (solids) saved: 521 tons • Water Savings: 7223 m³ • Electricity Savings: 405,801 kWh • GHG Emissions Reduced: 149 tons of CO₂ • Solid Waste Reduced: 16 tons • Wastewater Reduced: 5,036 m³
NICARAGUA		<p>The 11 companies in Nicaragua's food industry that participated achieved a total of \$298,244 in savings in just 6 months, an average of \$27,113 per company. In addition to reducing operating costs and, in some cases, increasing productivity and product quality, the project succeeded in integrating a Cleaner Production vision in many of the participating companies. This view creates a workflow at all levels of the company (management, production and operational) to prevent pollution at its source, saving resources and producing more with less.</p>	<ul style="list-style-type: none"> • Product (solids) saved: 20 tons • Water Savings: 11,311 m³ • Electricity Savings: 456,540 kWh • Wastewater Reduced: 9,755 m³
<p>Guatemala and El Salvador: Cleaner Production Private Sector Partnership (Government Grant S-LMAQM-08-CA-143) October 2008 – September 2010 Total Funding: \$594,000 Funder – US Department of State</p>			
GUATEMALA, EL SALVADOR	<p>As part of the CAFTA-DR's Private Sector Environmental Performance Program, the Department of State's Oceans, Environment and Science Bureau (OES) and the World Environment Center (WEC) initiated the CPP Project in October 2008. The project provided on-the-ground support to assist SME suppliers to Wal-Mart in both El Salvador and Guatemala; a Hotel Association in Guatemala; and the National Association of Dairy Processors in El Salvador to improve the private sector's environmental performance, reduce costs, and improve efficiency and competitiveness. The 35 participating companies (17 Wal-Mart El Salvador & Guatemala suppliers; 9 ANPROLAC companies; and 9 APEHGUA hotels) saved a total of \$621,400 and invested \$293,500 in new technology over the span of the project.</p>		<ul style="list-style-type: none"> • Materials /Inputs (solids) saved: 1.62 tons • Materials /Inputs (liquid) saved: 77,291 liters • Product (solids) saved: 1,165 tons • Product (liquid) saved: 5,125 liters • Water Savings: 16,876 m³ • Electricity Savings: 64,712 kWh • GHG Emissions Reduced: 1,162 tons of CO₂ • Solid Waste Reduced: 30 tons • Wastewater Reduced: 5,036 m³
<p>Australia: Greening General Motors-Holden Supply Chain January 2008—May 2009 Funder – Australian Ministry of Transportation</p>			
	<p>In 2008, GM Holden enlisted WEC to work with their suppliers to enhance their energy efficient and cleaner production practices in their manufacturing facilities. The project aimed to achieve supplier manufacturing and operational benefits, while simultaneously improving both environmental performance and efficiencies in the use of energy and other natural resources. GM Holden's suppliers received technical assistance in the effective application of Cleaner Production and Energy Efficiency</p>		<ul style="list-style-type: none"> • GHG Reduction of 692 tCO₂/yr (8 projects) • Energy Savings of 15,949 G_J/yr (14 projects) • Water Use Reduction of 2,253 kL/yr (11 projects) • Solid Waste Reduction of 2,434 tonnes/yr (5 projects) • Liquid Waste Reduction of 201,000 kL/yr (10 projects)

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	improvement processes and practices regarding air and water quality, waste management, natural resources and raw material usage. By the end of the project, a year later, 52 projects underway or completed; 20 future projects planned; and 7 future projects under consideration. Payback periods varied from 0-15 years with the vast majority of the projects having payback periods from 0-2 years.		projects)
Romania: Greening Alcoa Fujikura's Supply Chain in Romania July 2006 –May 2007 Funder – U.S. Agency for International Development			
	In a country that only treats/recycles 1% of its total industrial waste, the gains made in WEC's Romania project were especially meaningful. In 2007, the World Environment Center completed a Greening the Supply Chain project in Romania in partnership with Alcoa Fujikura (AFL) Romania and with funding from USAID. This project helped the Romanian small and medium sized enterprises (SMEs) supplying Alcoa Fujikura with goods and services to become more competitive by reducing energy, water and raw material consumption per unit of output. These successes simultaneously reduced the environmental impact for each product and service delivered to AFL.		<ul style="list-style-type: none"> • By reducing the amount of waste cardboard and changing the glue used in its process, a cardboard supplier saved 1,000 EUR/year • By optimising the electrical contacts on all company's panels, thus preventing fires, a supplier also made 10,000 EUR of savings on its energy bill • By fixing the leaks of and checking the necessary pressure needed by its compressed air system, a supplier saved 30,000 EUR/ year, 30 times the amount of money and time invested • Six out of the nine participating companies also made major capital investments and also made improvements to workers' health and safety
Brazil and Mexico: USAID Supply Chain Management Initiative (Government Grant with PA Consulting (Prime)) 2002-2004 Funder – US Agency for International Development In partnership with Alcoa, Johnson & Johnson and Dow Chemical, WEC and PA Consulting launched pilot programs in Mexico and Brazil to promote cleaner production along the supply chains of multinationals. The goals of the project were to: create "drivers" for Cleaner Production implementation among developing country SMEs who are suppliers to major multinationals; cultivate a culture of Cleaner Production innovation and environmental responsibility among SME suppliers in developing countries; and demonstrate the effectiveness of voluntary, preventive environmental programs and thereby promote next-generation environmental policy initiatives by both the public and private sectors.			
	WEC and PA Consulting worked with member companies, Johnson and Johnson, Alcoa, and Dow to access their supply chains in Brazil and Mexico for the pilot project of Greening the Supply chain. The ultimate goal was to implement wide-scale adoption of cleaner production best practices and technologies among Mexican and Brazilian Small and Medium Enterprises- the suppliers to the aforementioned multinationals. Through the multinational, the team worked with ten J&J suppliers and 12 Alcoa suppliers in Mexico; and 12 Dow suppliers and 13 Johnson & Johnson suppliers in Brazil. The project was initiated through planning workshops with the SMEs to learn how to identify cleaner production opportunities; how to establish project action plans for implementing these voluntary initiatives, and how to properly collect data for reporting purposes. WEC teams performed site visits of all participating suppliers to conduct site assessments and to monitor supplier-driven progress reports. These pilot projects laid the critical groundwork for project design in all future and current WEC initiatives in cleaner production.		