

# The Exchange Corporate Sustainability Program FY10 Secretary of the Army Environmental Award Nomination for Sustainability – Team

## Program Management

The Exchange is a joint military command with a dual mission: to provide quality merchandise and services to 12.2 million authorized customers worldwide at competitively low prices and generate earnings which provide a dividend to support military morale, welfare, and recreation (MWR) programs. Two-thirds of the Exchange non-appropriated earnings go to MWR programs as a supplemental source of funding. The Exchange operates more than 3,100 facilities worldwide with locations in Operation Enduring Freedom, Operation Iraqi Freedom and Operation New Dawn. Facilities include retail stores, food concessions, movie theaters, and convenience and specialty stores. The Exchange triple bottom line identifies “People-Planet-Benefit” where profit drives the dividend which provides the means to support the military MWR programs. In 2009, the Exchange generated \$261.6 million to fund MWR programs. Over the past ten years, the Exchange has contributed over \$2.6 billion toward MWR programs.

The Exchange initiated its Corporate Sustainability Program in support of The Exchanges’ strategic goal to *build a culture of loyalty, ownership, sustainability and continuous improvement*. Through the strategic planning roadmap, three sustainability performance measures were established:

1. Reduce energy operating costs
2. Reduce the carbon footprint
3. Market energy-efficient products

To heighten awareness of Exchange sustainability efforts, in 2010 we published the 2<sup>nd</sup> edition of our sustainability brochure (**Photo 1**) which emphasizes the corporate sustainability vision and goals. It has been distributed to numerous military communities, government agencies, and private sector organizations.



**Major General Bruce Casella, CEO**

“The Exchange has incorporated sustainability as one of its strategies for winning the future and reducing its carbon footprint. Clearing up the environment begins at home and “home” for the Exchange is the Army and Air Force communities throughout the world where our valued patrons serve, live, dine and shop. Since the Exchange Sustainability Program began four years ago, conservation efforts and associate participation within the Exchange have become increasingly visible. To encourage these earth-friendly initiatives, the Exchange established a Sustainability Award program to recognize superior sustainability performance. Reducing energy, water consumption, and waster generation is a win-win situation for all, making partnerships between the Exchange and installations crucial.”



**Mr. Michael Howard, COO**

“Just as the Exchange is committed to providing the best shopping experience of our military customers, we are determined to set the standard for exceptional environmental stewardship in the military retail community. Our Sustainability Program has matured in the last several years to touch all Exchange associates and our customers around the world. From recycling sandwich bales, to more sustainable facilities, to corporate energy awareness training, our collective efforts have made a difference in our overall quality of life, conservation of the environment and also to our bottom line. Our program has added value to our customers which means a larger MWR dividend for our Soldiers and Airmen.”

**Photo 1: Exchange Sustainability Brochure**

The Exchange sustainability team reviews operations, practices, policies and procedures to continuously improve the sustainability program. The Exchange recognizes how the company, its associates and customers worldwide impact the environment. We have integrated a corporate responsibility toward positive stewardship in relation to environmentally-friendly practices. Directorate Senior Vice Presidents are tasked by the Commanding Officer to surpass sustainability measures by incorporating sustainability actions and goals into normal business practice.

Using the Energy Policy Act of 2005, Executive Orders 13423 and 13514, and Energy Independence and Security Act as benchmarks, annual (year-over-year) milestones are set for each of the six corporate goals:

1. Reduce energy use intensity (EUI) 3%
2. Reduce water use intensity (WUI) 2%
3. Increase recycled tonnage 100% and decrease trash removal cost
4. Increase fleet fuel efficiency 2% and alternative fuel (B20) consumption 15%
5. Design all new construction to LEED Silver standard and register all projects LEED
6. Increase Energy Star major appliance stock selection to 50%

From metered and estimated billing data, CONUS installations exceeded FY2009 targets and are on pace to meet most goals in FY2010 (**Table 1**); thus, contributing to the military readiness or civil works mission.

	FY09 vs. FY08				FY10 vs. FY09 (thru 2Q)			
	FY08	FY09	Difference	% Change	FY09	FY10	Difference	% Change
<b>Utilities</b>								
Energy (MMBtu)	2,188,233	2,117,922	(70,311)	-3.2%	1,044,216	1,016,739	(27,477)	-2.6%
Water (kgal)	441,296	417,266	(24,030)	-5.4%	212,374	199,327	(13,047)	-6.1%
Recycled Trash (tons)	923	4,573	3,650	395.4%	1,683	3,375	1,692	100.5%
Fleet Fuel (gallons)	2,617,685	3,300,380	682,695	26.1%	1,636,864	1,660,081	23,217	1.4%
Fleet Miles Driven	17,944,444	21,285,980	3,341,536	18.6%	10,650,149	10,808,937	158,788	1.5%
Fleet Fuel Efficiency (mpg)	6.86	6.45	(0.41)	-5.9%	6.506	6.511	0.00	0.1%
Greenhouse Gas Emissions (MTCO <sub>2</sub> )	395,756	383,217	(12,539)	-3.2%	195,511	188,396	(7,115)	-3.6%
<b>Costs</b>								
Energy Cost	\$ 41,846,801	\$ 39,160,843	\$ (2,685,958)	-6.4%	\$ 19,674,677	\$ 18,743,620	\$ (931,057)	-4.7%
Water Cost	\$ 930,754	\$ 894,851	\$ (35,903)	-3.9%	\$ 462,846	\$ 412,558	\$ (50,288)	-10.9%
Trash Removal Cost	\$ 3,423,573	\$ 3,068,313	\$ (355,260)	-10.4%	\$ 1,816,689	\$ 1,243,495	\$ (573,194)	-31.6%
Recycling Cost (Revenue)	NA	\$ (183,274)	\$ (183,274)	---	\$ (47,073)	\$ (282,023)	\$ (234,950)	499.1%
Fleet Fuel Costs	\$ 9,737,788	\$ 5,954,192	\$ (3,783,596)	-38.9%	\$ 2,849,680	\$ 4,125,184	\$ 1,275,504	44.8%
<b>Total Cost</b>	<b>\$ 55,938,916</b>	<b>\$ 48,894,925</b>	<b>\$ (7,043,991)</b>	<b>-12.6%</b>	<b>\$ 24,756,819</b>	<b>\$ 24,242,834</b>	<b>\$ (513,985)</b>	<b>-2.1%</b>

**Table 1: FY2009 & FY2010 Sustainability Results**

## **Technical Merit**

**Target Reduction:** In order to measure and verify performance, the Exchange upgraded WATTS, a customized **Web-based AAFES UTility Tracking System**. WATTS measures utility consumption and cost for the Base Exchange buildings. WATTS allows building comparisons not only by square footage, but also by consumption; therefore, the Exchange is better able to target facilities for energy saving opportunities and projects.

**Innovative Techniques:** The Exchange focuses on innovation by conducting numerous pilot projects to test new technologies. Performance of pilot projects is measured and when results are cost-effective, best practices or new technology is rolled out to all locations. As a result of one successful pilot, light emitting diode (LED) technology replaced high intensity discharge (HID) as the Exchange standard lighting on gas canopies (**Photo 2**). Not only did the LED lights prove to be 75% more energy efficient and have a simple payback of three to five years, they improve product marketing and security, and reduced night sky pollution. To date, we have completed installation of 46 gas canopy LED retrofits at Army installations.



**Photo 2: LED Canopy Lights**

As a byproduct of the LED program, the Exchange is replacing reach-in cooler fluorescent T-12 lights with LED technology and occupancy sensors. Other pilot projects currently being tested include an energy management controls system (EMCS) for retail facilities and offices and one for restaurant facilities. Potential equipment to control and monitor include lights, HVAC, exhaust fans, refrigeration equipment and food preparation equipment.

**Energy Efficient Equipment:** When purchasing new equipment, the objective is to find the most energy-efficient equipment that meets Exchange needs. For example, all food steamers are being replaced with Energy Star qualified steamers that recycle water. In 2009, 18 energy-efficient walk-in coolers with demand defrost systems were installed at Exchange stores. In 2009 and 2010, 13 dry line fittings were installed at Taco Bell, 148 batch broilers (**Photo 3**) at Burger King and 14 energy-efficient ovens at Anthony’s Pizza restaurants.



**Photo 3: Batch Broiler**

To reduce energy consumption and greenhouse gas emissions, the Exchange requires 20% of the machines on beverage vending contracts renewed each year to be Energy Star rated. The industry average is 5% to 8%.

**Waste Reduction:** Efforts to reduce landfill waste are yielding financial and social returns while at the same time providing energy conservation, pollution prevention and environmental stewardship. The Exchange implemented a corporate-wide “Trash-4-Cash” recycling program in 2009. The recycling program focuses on packaging by-products in a “Super Sandwich Bale” (**Photo 4**). Plastic hangers, aluminum cans, books and periodicals, cardboard and shredded paper are compressed into large bales ready for recycling. The program also uses Super Sorter “Three-in-One” recycle bins to encourage customers and associates to recycle paper, plastic and aluminum cans. This program is being used at 152 Army Exchange facilities in the United States. The commodities recycled in 2009 and 2010 totaled 7,948 tons which has been diverted from world landfills.



**Photo 4: Sandwich Bale**

We rolled out automated paper towel dispenser and compact tissue programs to CONUS in FY2009 and expanded to PAC and EUR in FY2010. Automatic dispensers allow adjustable settings for sheet length, time delay and one-at-a-time towel dispensing. Compact tissues have no cores, wrappers or corrugated cases; therefore, reducing packaging waste by 95% or 8.5

pounds per case. Both programs reduce manufacturing and shipping fuels, and decrease landfill waste by an estimated 363,000 pounds per year.

The Exchange sells used cooking oil and grease from 290 Army installation food facilities throughout the United States. This program takes over 2 million pounds of used vegetable oil that would otherwise have become waste and recycles it into valuable resources such as animal feed.

**Sustainable Buildings:** The Exchange is committed to develop more sustainable, high-performance buildings and requires all new construction projects designed to LEED Silver standards. In 2009 and 2010 the Exchange registered a total of 34 projects with USGBC. One Exchange shopping center at Ft. Polk participated in the USGBC LEED New Construction (NC) Retail Pilot Program that opened in April 2010. Also, the first LEED New Construction 2.2 designed shoppette opened at Ft. Bragg in October 2010 and LEED Core & Shell designed lifestyle center is scheduled to open at Ft. Bliss (**Photo 5**) in November 2010.



**Photo 5: Ft. Bliss Lifestyle Center**

**Transportation:** The Exchanges' private truck fleet transports merchandise between four distribution centers and 1,200 locations throughout the United States. The Exchange is committed to reducing the use of petroleum-based products by using eco-friendly fuel. Two initiatives are to increase the use of bio-diesel fuel and efficiency of petroleum product consumed per mile. The CONUS fleet of 347 trucks is 100% bio-diesel (B20) compatible. To support this effort, 44 B20 fueling stations are available on Exchange military installations. In 2009, we increased bio-diesel fuel consumption by 37,000 gallons (11.5%) compared to 2008.

We installed the Oil Purification System (OPS-1) on 264 tractors and it has proven cost effective by reducing the number of annual oil changes from 8 to 1. The OPS-1 is a compact, light-weight system that cleans and refines the motor oil while the tractor truck is operating. In addition, Auxiliary Power Units (APUs) and automatic tire inflation devices were piloted in 2009. The Exchange was awarded EPA SmartWay Transport Partner with the highest score available (1.25) and EPA SmartWay tractor and trailer certifications. Beginning in 2009, the Freightliner Cascadia tractor which is EPA SmartWay certified is being integrated into the Exchange fleet. The Freightliner Cascadia has a Detroit Diesel (DD) 15 six-cylinder inline engine, aerodynamic features and wide base single tires which decrease rolling friction and in turn saves fuel.

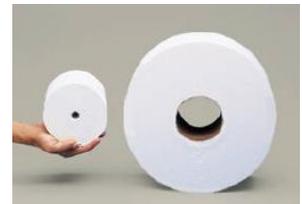
### **Orientation to Mission**

The Exchange strategic approach to “think big and act small to win the future” enhances the military readiness and civil works mission. The Exchange reduces greenhouse gas emissions by targeting resources that achieve the six corporate sustainability goals. From metered and estimated billing data, the Exchange CONUS installations exceeded energy and water FY2009 targets and are on pace to meet FY2010 goals. For FY2009 and through 2Q FY2010, the Exchange has achieved year-over-year energy reductions of 3.2% and 2.6% and water reductions of 5.4% and 6.1%, respectively. Listed below are Exchange sustainability projects completed and/or ongoing in 2009 and 2010 that have enhanced the Army’s mission (savings in parentheses):

**Energy:** Completed energy audits of 11 CONUS Army installations (\$173,000 identified energy savings) and initiated audits at 4 other Army CONUS installations, completed LED lighting retrofits on 46 Army gas canopies (75% energy reduction/canopy), purchased 18 Master-Bilt Coolers (\$140,400/year) with demand defrost system (\$20,952/year), installed 13 dry line fittings at Taco Bell restaurants (\$20,800/year), installed 148 batch broilers at Burger King restaurants (\$444,000/year), installed 14 energy-efficient ovens at Anthony's Pizza restaurants (\$10,696/year), purchased 550 pieces of Energy Star food service equipment (433% increase), and replaced 651 vending machines with Energy Star models (15-20% electricity reduction/machine).

**Water:** Installed over 154 automatic faucets in various Exchange restrooms (70% water reduction/faucet).

**Waste:** "Trash-4-Cash" recycling program diverted 7,948 tons of trash from landfills (\$465,297 total generated income), paper towel dispenser and compact coreless tissue (**Photo 6**) program reduces landfill waste an estimated 363,000 pounds per year, and recycling used cooking oil reduces waste by 2 million pounds per year (\$455,000/year generated income).



**Photo 6: Compact Tissue**

**Fossil Fuels:** Awarded EPA SmartWay Transport Partner with the highest score available (1.25) and installed OPS-1 on 264 fleet tractors (3,251 gallons or 53% engine oil reduction in FY2009).

**Sustainable Buildings:** Registered 34 LEED Silver designed new construction projects with USGBC (24% total energy reduction, 30% total water reduction) and opened or scheduled to open four LEED designed projects.

**Procurement, Marketing and Sales:** Increased total sales of CFLs from 67,000 to 112,000 (67% thru 3Q FY2010), increased reusable bag sales from 83,000 to 118,000 (42% in FY2009), increased Energy Star major appliance selection to 76%, increased "green" softline product assortment from 21 to 185 (780%), increased "green" consumable product selection from 318 to 846 (166%), and increased Energy Star products featured on [www.shopmyexchange.com](http://www.shopmyexchange.com) from 292 to 328 (12%).

## **Transferability**

Through Exchange dedication to sustainability goals, training, performance metrics, partnerships, and education, a worldwide commitment to sustainability is fostered throughout the Exchange Army installations. Every Exchange directorate is involved and has created measurable sustainability goals as part of their yearly accomplishment.

The Exchange shares sustainability strategies and techniques with military service partners, government agencies and retail competitors. In October 2010, the Exchange hosted the annual Joint Service Facilities Conference where DECA, NEXCOM, MCX, Air Force MWR, Army MWR and Navy MWR exchanged sustainability approaches. Sustainability program, federal policy and energy management presentations were given by Exchange personnel to external organizations including ODUSD I & E, GovEnergy 2010, North Texas Association of Energy Engineers (NTAEE) and FMA Progressive Energy, Environment and Sustainability Congress. A federal policy tool has also been made available to outside organizations.

The Exchange has an energy audit program to assess the energy efficiency of metered Exchange facilities, recommend low-cost and no-cost energy efficiency measures, review and/or reconcile past utility billing data, and identify any operations and maintenance efficiency opportunities. Each successful audit combines teamwork with Exchange and DPW personnel. Public Works assists in providing expertise in installation controls systems, utility infrastructure, real property management and utility billing and invoices. Exchange auditors identify energy, operations and maintenance opportunities. A detailed audit report with above findings is provided to the Exchange General Manager and Facilities Maintenance Organization (FMO), Garrison Commander and DPW. Audit findings may also become standard practices and added to the Exchange Operating Procedures (EOP 36-1), posted on the Exchange Energy Management portal or communicated through monthly newsletters (**Photo 7**).

By piloting energy-efficient and water-efficient equipment, the Exchange influences the food industry worldwide. The Exchange collaborates with franchise partners, such as Taco Bell, Popeye's, Burger King and Cinnabon, to make procurement of energy-efficient equipment the standard at both Exchange facilities and outside locations.

The Exchange installed batch broilers at Burger King, dry line fittings at Taco Bell, energy-efficient ovens at Anthony's Pizza, LED menu boards at Charley's Grill restaurants and purchased Energy Star food service equipment. In addition, the Exchange requires all food equipment, such as ice machines and dishwashers, be replaced with Energy Star models over the normal life cycle process.

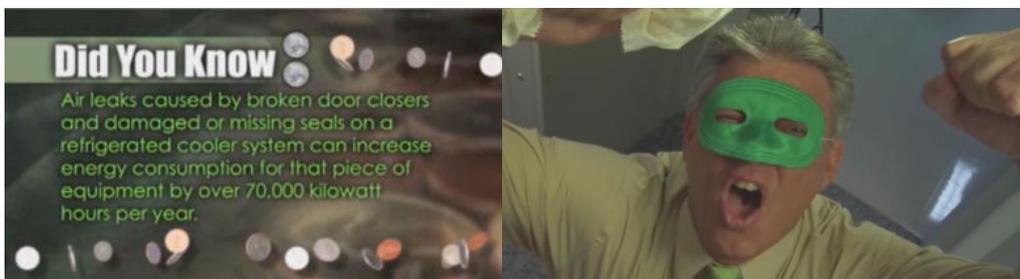


**Photo 7: Monthly "Energy News Gram"**

U.S. Department of Energy and the Federal Interagency Energy Policy Committee selected the Exchange to receive a 2010 Federal Energy & Water Management Award (FEMP).

**Stakeholder Interaction**

**Education:** Exchange sustainability efforts reach out to locations around the world. The Exchange has four energy management courses available to 44,800 associates worldwide. The four online courses provide education and awareness of energy conservation opportunities applicable to major Exchange business functions (**Photo 8**). In 2009, 32,374 of Exchange associates completed the training. Course completion is tracked monthly by region.



**Photo 8: Energy Management Course and Broadcast TV**

The Exchange Logistics Directorate has a robust training program used to educate all motor vehicle drivers, terminal managers, and mechanics on actions they can take to maximize fuel efficiency. As a result, fleet fuel efficiency has increased and engine oil consumption has decreased. This contributes to meeting EO 13423 requirements.

**Sustainability Award & Community Partnerships:** In 2009, the 1<sup>st</sup> Annual Exchange Sustainability Award program was developed to recognize the Exchanges that demonstrate superior sustainability performance. Sustainability partnerships with the military community as well as utility and waste reduction performance are emphasized through the program. The 2<sup>nd</sup> Annual Sustainability Award for superior 2010 performance will be presented in March 2011.

Exchanges partner with their military communities and local organizations for sustainability and conservation activities including membership on installation sustainability teams, promotional events, displays, education and training. Ft. Knox, Ft. Carson and Schofield Barracks are just a few of the Exchanges that are active members of their installation’s energy council or team. In 2009 and 2010, the Ft. Lewis Exchange has partnered with Tacoma Power in a CFL sales incentive program. On monthly basis, Tacoma Power reimburses the Exchange in accordance with the number CFL units sold. In 2009, Ft. Campbell held an Earth Day bike ride and energy awareness exhibit.

**Military Community & Associate Awareness:** The Exchange partners with Energy Star (ES) retail to promote the procurement and sale of energy-efficient appliances, electronics, lighting and home supplies. The Exchange has increased the ES stock assortment to 76% of all major appliances, 100% of televisions and 90% of computers.

Exchange Marketing Directorate (MK) also contributes to the effort by ensuring the sustainability message reaches out to customers worldwide. Every brochure, tabloid (**Photo 9**), coupon book (**Photo 10**) and catalog available in Exchange shopping centers, shoppettes, and other facilities has a graphic that reminds customers to “Please Recycle.” The Exchange aggressively markets earth-friendly products to customers and maximizes exposure through DoD partnerships. MK has produced Energy Star advertising segments that are broadcast in all exchanges for a week and repeated monthly. The Exchange sells “Green to Go” recycled and reusable canvas bags worldwide. The bags serve two functions; they reduce landfill waste and promote sustainability.



**Photo 9: Marketing tabloid**



**Photo 10: Coupon book**