U.S.ARMY

SUSTAINABILITY REPORT 2010

SUSTAIN THE MISSION ▪ SECURE THE FUTURE

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SEPTEMBER 2011

Front Cover: Photos of Soldiers in the Army National Guard Agribusiness Development Team (ADT) in Afghanistan. From Top Right: Solar lighting at Area Support Group-Qatar, Arkansas Guardmembers examine a wheat crop outside Shahr-e-Safa, and a California Guardmember gathers a soil sample in Marawara. See page 28 for a detailed explanation of the ADT program.

DEPARTMENT OF THE ARMY
WASHINGTON DC 20310

The United States Army is the strength of the Nation, and our strength comes from our Soldiers, their values, and the Families and Civilians who support them. The Army is in the 9th year of protracted conflict, and our Warfighters have performed exemplary service in defense of the homeland. The demands of repeated deployments continue to pose a challenge, so we are striving to implement strategies that improve resiliency throughout the force. Sustainability is one such strategy, but it is also operationally imperative, fiscally prudent, and mission critical.

This is our third annual sustainability report, highlighting the Army's achievements in 2009. The year 2009 was a watershed year for sustainability in the Federal government with the issuance of Executive Order (EO) 13514- Leadership in Environmental, Energy, and Economic Performance on 5 Oct 2009. As required by the EO, the Department of Defense began preparation of its Strategic Sustainability Performance Plan. The Army initiated development of the Army Sustainability Campaign Plan.

As the Army Sustainability Report 2010 notes, we are striving to make sustainability, as well as energy security, a key performance parameter in our installations, weapon systems, and contingency operations. Implementing sustainability across the Army enterprise will ensure the Army of tomorrow has the same access to energy, water, land and other resources as that of today. Army Green is Army Strong!

Peter W. Chiarelli
General, U.S. Army
Vice Chief of Staff

Joseph W. Westphal
Under Secretary of the Army

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Introduction

In this third annual *Army Sustainability Report 2010* (ASR10), the Army describes its continued integration of sustainability into operations at all organizational levels. Among the major developments in 2009, the Army appointed the Under Secretary as the Army senior sustainability official, finalized the *Army Energy Security Implementation Strategy (AESIS)* and initiated development of the *Army Sustainability Campaign Plan* (ASCP).[1]

To the Army, sustainability is a vastly complex concept: it is an organizing principle that factors mission, environment, community and economic benefit into each of its decisions and activities. Training, equipping and supporting the Army's operations require land, resources and people. The demands of repeated overseas deployments have stretched and stressed the Army institution, support structures, systems and equipment. The Army continues to pursue sustainability strategies to meet current and future mission requirements worldwide, safeguard human health, improve the quality of life and enhance the natural environment.

The efforts of the Army in 2009 reflect the ongoing evolution of sustainability, from early initiatives to preserve installation mission readiness to developing the ASCP to further integrate and coordinate sustainability efforts across all Army organizations. Each of these steps represents progress in protecting reliable access to energy, water and other natural resources to preserve strategic choice and operational flexibility into the future. ASR10 offers an overview of Army operations, describes the meaning of sustainability and provides a quantitative and qualitative assessment of Army progress.

ASR10 is published in accordance with the Global Reporting Initiative (GRI) *Sustainability Reporting Guidelines* (third generation, or G3) in conjunction with GRI's *Sector Supplement for Public Agencies*.[2] The Sector Supplement, available in the 2005 pilot version, is a tailored version of GRI Guidelines designed to assist public agencies with making sustainability reports more relevant. GRI provides the Army a template to communicate its organizational performance and policies to its stakeholders in a form comparable to that of other organizations and public agencies.

The Army reports data to GRI Application Level B (Figure 1), which means that it reports all portfolio criteria describing the organization and its processes against performance indicators in the areas of economics, environment, human rights, labor, society and product responsibility. Not all GRI indicators are material—significant and relevant for disclosure—for the Army. Of 87 indicators, the Army fully reports on 33 and partially reports on 21, an increase from the 2009 ASR. The Army continues to review how GRI applies to its mission and activities. Finally, to the extent practical, ASR10 explains why the Army has not reported on some indicators.

The annex to this report contains a complete index to GRI sustainability performance metrics in tables that have links to the relevant publicly available Army reports and documents. Although the Army maintains extensive data for its organization, the ASR draws solely upon data searchable and accessible to the public via the World Wide Web. Recognizing the importance of quality, the Army has processes in place for the review of data used in the report and continues to improve its data collection and reporting efforts. Among other methods of providing quality assurance and continued improvement, the Army relies on the performance of external and internal audits to evaluate the effectiveness of programs and processes related to sustainability data.

The Army invites readers of this report to submit comments directly to the Office of the Assistant Secretary of the Army for Installations, Energy and Environment. See the back cover for contact information and the mailing address.

Report Application Level	C	C+	B	B+	A	A+
Standard Disclosures — G3 Profile Disclosures OUTPUT	Report on: 1.1 2.1–2.10 3.1–3.8, 3.10–3.12 4.1–4.4, 4.14–4.15	Report Externally Assured	Report on all criteria listed for Level C plus: 1.2 3.9, 3.13 4.5–4.13, 4.16–4.17	Report Externally Assured	Same requirement for Level B	Report Externally Assured
G3 Management approach Disclosures OUTPUT	Not required		Management approach disclosures for each indicator category		Management approach disclosures for each indicator category	
G3 performance indicators and sector supplement performance indicators OUTPUT	Report on a minimum of 10 performance indicators, including at least one from each of: economic, social and environmental		Report on a minimum of 20 performance indicators, including at least one from each of: economic, environmental, human rights, labor, society, and product responsibility		Report on each core G3 and sector supplement* indicator with due regard to the Materiality Principle by either: a) reporting on the indicator or b) explaining the reason for its omission	

*Sector supplement in final version

Figure 1. Army Report Standard Disclosure Summary for GRI Application Level

Importance of Sustainable Army Operations

The health and security of our Nation as well as global stability are impacted by our ability to safeguard and protect our environment.

—2009 Army Earth Day Memorandum

Army Concept of Operations

The Army "exists to serve the American people, protect enduring national interests and fulfill the Nation's military responsibilities. More specifically, the Army is to provide to combatant commanders the forces and capabilities necessary to execute the National Security, National Defense and National Military Strategies."[3] Simply stated, *the Army's purpose is to fight and win the Nation's wars.*

In the aftermath of September 11, 2001, America continues to engage in a complex and protracted war. More than a million Soldiers have served in the ongoing campaigns in Iraq and Afghanistan, and many are on their third or fourth tour. In 2009, the Army had more than 255,000 Soldiers and 18,500 Civilians deployed or forward-stationed in nearly 80 countries around the world. The remaining stateside Soldiers are supporting domestic missions, resetting from recent deployments or preparing for an upcoming deployment. Despite the pressures and demands, the Army's Soldiers, Families and Civilians continue to answer the call of duty with courage and distinction.

Driven by its enduring mission, the Army's long-term objective is to ensure national security now and in the future. The Army's current concept of operations requires its combatant commanders to simultaneously employ offensive, defensive and stability or civil support operations as part of an interdependent joint force to seize, retain and exploit the initiative. It accepts prudent risk to create opportunities to achieve decisive results. In this changed environment of persistent conflict, the Army recognizes that it must conduct military operations in concert with diplomatic, informational and economic efforts to achieve victory. The reality is that the battlefield success of traditional offensive and defensive operations is no longer enough. In a strategic context, final victory requires equally important, concurrent stability operations to lay the foundation for lasting peace.[4]

Sustaining the Force

The Army's ability to adjust its operational posture in response to the constantly evolving threat environment will help ensure that it can accomplish its primary mission in virtually any situation. However, that alone will not guarantee success. The Army recognizes that its ongoing operations and activities can and do have pronounced economic, environmental and social impacts that, if not addressed, can directly affect its ability to accomplish its mission. This knowledge has led the Army to embrace sustainability as a principle underlying everything it does in all functional areas and at all organizational levels.

Today's sustainable Army must meet current mission requirements worldwide—while considering future ones, safeguarding human health, improving quality of life and enhancing the natural environment. The Army is moving to operationalize sustainability by synchronizing efforts across the enterprise, including planning, training, equipping and conducting operations worldwide. As reflected throughout this report, the Army upholds sustainability as an organizing principle, keeping one primary objective in mind: to enable access to the air, land and water resources needed to train and ready the force for current and future missions.

Rebalancing the Force

The Army is a resilient, committed, professional force that has made substantial progress in its quest for sustainability—but it is out of balance. In 2007, then Army Chief of Staff, General George W. Casey, Jr., introduced four imperatives to restore balance: sustain, prepare, reset and transform. Every year, in the annual *Army Posture Statement*, the Army reports its prior-year progress in the four imperatives. *Across are key features of the Army's progress in 2009*:

1. *Sustain* its forces by implementing new programs and resources to support Soldiers, Wounded Warriors and

Families. In 2009, the Army exceeded its recruiting and reenlistment goals, reduced off-duty fatalities by 20 percent, instituted Comprehensive Soldier Fitness, established a Warrior Transition Command, expanded Survivor Outreach Services to 26,000 Family members and implemented the Post-9/11 Veterans Educational Assistance Act of 2008 (otherwise known as the post-9/11 GI bill), increasing educational benefits.

2. *Prepare* its forces to succeed in the current conflict. In 2009, the Army manned, trained, equipped and deployed 67 brigade equivalents,[5] began the phase-out of stop-loss,[6] ended 15-month tours in November, fielded 12,000 Mine Resistant Ambush Protected vehicles, established an Army Training Network to increase access to best practices and increased use of biometric technologies.

3. *Reset* and repair units and equipment. In 2009, the Army completed the reset of 29 brigades' worth of equipment and began a drawdown in Iraq to redistribute or dispose of 3.4 million pieces of equipment and close support activities.

4. *Transform* and grow the Army to keep it ready for current operations and future contingencies. In 2009, the Army closed three active installations and five US Army Reserve Centers, reached 88 percent completion on modular conversion of brigades to standardize formations and wrote a Leader Development Strategy.

Recruiting and Retention

Recruiting and retaining confident, adaptive, competent Soldiers remain among the highest priorities of the Army.

Recruiting decreased 14.2 percent in fiscal year (FY) 2009, from 169,860 to 145,740 Soldiers. The Army continues to exceed its recruiting goals, including its goal of 140,200 for FY09. It also surpassed its goal for Tier 1 recruiting, which includes those with a high school diploma or above. In FY09, the Army had 95 percent Tier 1 recruits, higher than the previous several years and 5 percentage points higher than the goal.

Retention measures the number of Soldiers reenlisted during a given fiscal year. In FY09, Army retention decreased 3.2 percent from 120,050 to 116,220 Soldiers. This decrease is based on a smaller eligible population in FY09. However, the Army continued to slightly exceed the goals set each fiscal year. Reenlistment bonuses for high-demand specialties helped the Army exceed its retention goal for FY09.

Table 1, later in this report, shows recruiting and retention trends since FY04.

Army Mission, Vision, Leadership and Organization

Mission

The Army's mission is to support the *National Security, National Defense and National Military Strategies* by providing well-trained, well-led and well-equipped forces to the combatant commanders. This mission encompasses the intent of Congress, as defined in Title 10 United States Code (U.S.C.), for the military to:

- preserve the peace and security of, and provide the defense for, the United States; its territories, commonwealths and possessions; and any areas it occupies;
- support national policies;
- implement national objectives; and
- overcome any nations responsible for aggressive acts that imperil the peace and security of the United States.

New adversaries, new technologies, persistent conflict and the growth of asymmetric warfare have compelled the Army to transform how it trains and equips its Soldiers, how it is organized and how it fights or engages in operations.

Vision

The Army is committed to remaining the world's preeminent land power, relevant and ready at all times to serve the Nation and support its allies. The Army will continue to supply combatant commanders with the forces necessary to defeat any adversary, in any situation, at any time. The Army, therefore, must fully train and appropriately organize its forces, develop innovative and adaptive leaders and design support structures appropriate for the new global security environment.

Leadership

On September 21, 2009, the Honorable John McHugh became the 21st Secretary of the US Army, and Dr. Joseph Westphal became the 30th Under Secretary of the US Army—the Army's senior sustainability official. General George Casey, Jr. continued his duties as the Army Chief of Staff. General Peter W. Chiarelli continued his duties as the Army Vice Chief of Staff. To learn more about Army leadership, visit the Army website at www.army.mil/leaders/.

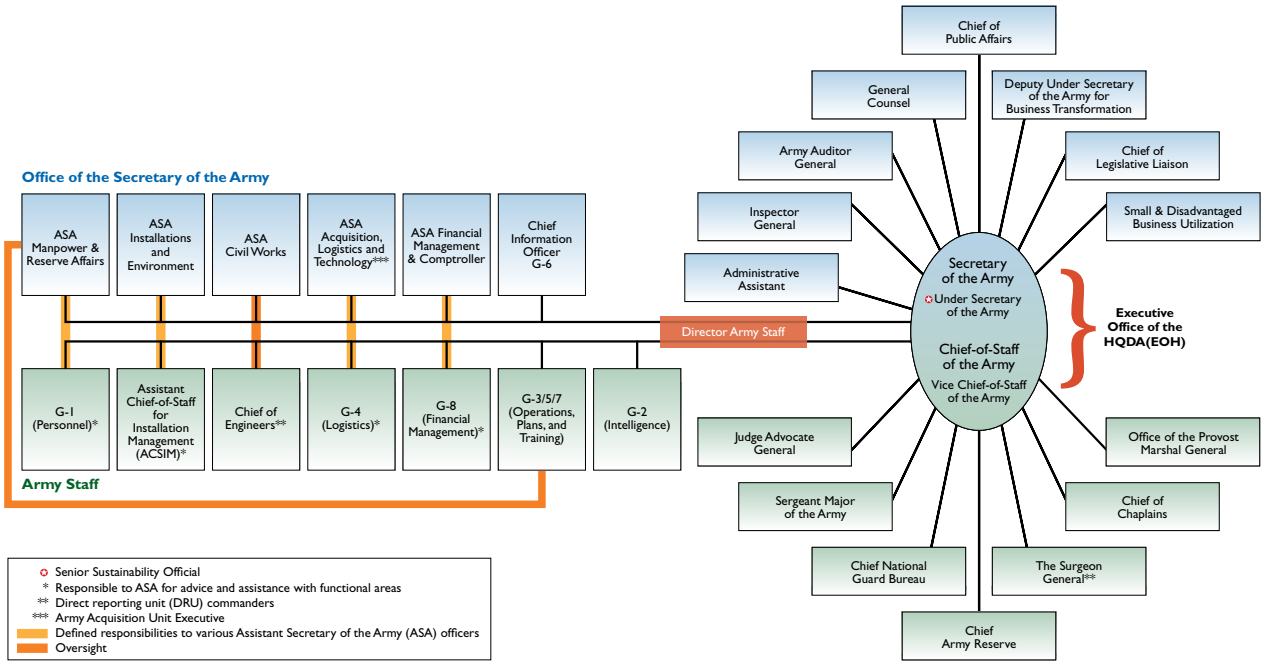
Organization

The Army is one of the three military departments (Army, Navy and Air Force) reporting to the Secretary of Defense (SECDEF). To accomplish today's defense missions, including defending the homeland and supporting civil authority, the Army has more than 808,000 Soldiers on active duty and more than 273,000 Army Civilians, who perform critical missions in support of the institution at every level.

The Army's organizational structure consists of two interdependent pieces, the Generating Force and the operational, or warfighting, Army. Designed to facilitate adaptation, this organizational construct effectively combines:

- a centralized hierarchy (the Generating Force), that part of the Army whose primary purpose is generating and sustaining operational Army units by performing functions specified and implied by law, but also, as a consequence of performing those functions, has capabilities that are useful in supporting operations in the current operational environment, and
- decentralized, functionally focused subordinate organizations (the operational Army) empowered to adapt and make decisions to effectively and efficiently support or execute mission requirements.[7]

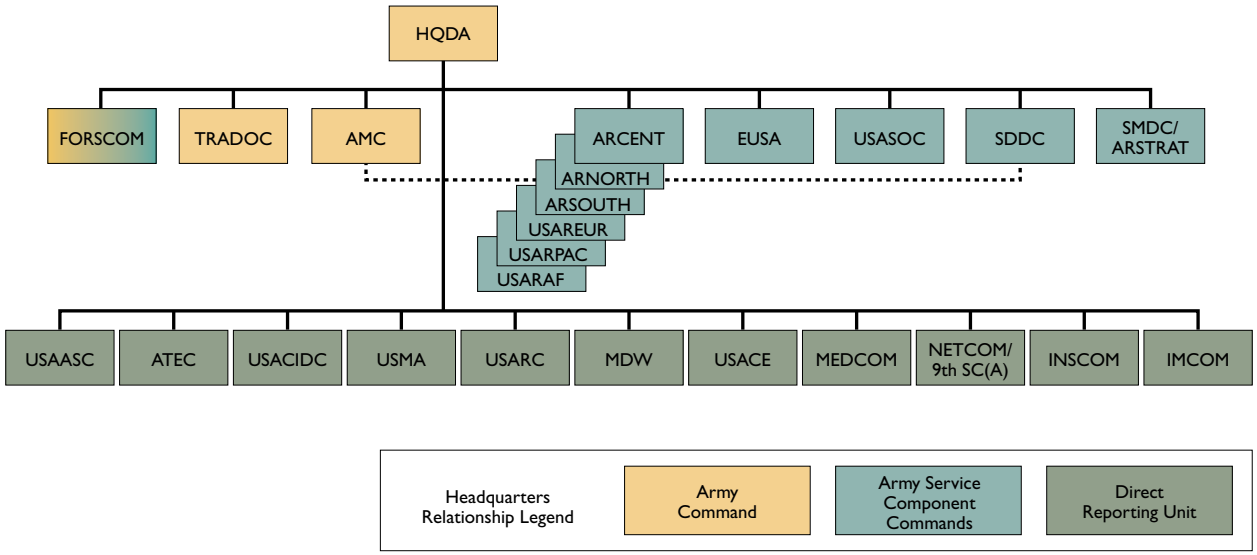
Figure 2 illustrates how Headquarters, Department of the Army (HQDA), under the direction of the civilian Secretary of the Army and the military Chief of Staff, leads and manages the Army.



Source: *How the Army Runs, A Senior Leader Reference Handbook, 27th Edition,* http://www.carlisle.army.mil/usawc/dclm/figures.htm.

Figure 2. HQDA Organization Chart (End of FY09)

The operational Army consists of numbered armies, corps, divisions, brigades and battalions organized by region. The operational Army provides capability for the combatant commander. Figure 3 illustrates the current Army command structure.



Note: See the "Abbreviations" section at the end of this report for definitions.

Source: http://www.army.mil/info/organization/

Figure 3. Army Command Structure

The Generating Force supports the operational forces by providing the training, facilities and equipment to prepare and sustain Soldiers. In the Generating Force, the US Army Forces Command (FORSCOM) trains and mobilizes Soldiers and deploys them to the operational Army. In the training domain of the Generating Force, the US Army Training and Doctrine Command (TRADOC) recruits Soldiers, develops leadership among Soldiers and Civilians, designs the future combat force and maximizes institutional learning. The US Army Materiel Command (AMC) supports Army acquisition and logistics, including managing industrial bases and processes.

Direct reporting units (DRUs) to HQDA mentioned in this report include the US Army Medical Command (MEDCOM), US Army Corps of Engineers (USACE), Installation Management Command (IMCOM) and US Army Reserve Command (USARC).

The Army's active and reserve components have operational and institutional functions. The active component consists of full-time Soldiers assigned to the operational and institutional organizations that perform day-to-day Army missions. Congress annually reviews and mandates the number of Soldiers that the Army may maintain. The reserve component consists of the US Army Reserve (USAR) and the Army National Guard (ARNG).

The USAR provides specialized units and resources to support the deployment and sustainment of Army forces around the globe. In addition, the USAR is the main source of individual Soldiers to augment headquarters staff and fill vacancies in the active component.

The ARNG has a federal mission to provide trained and ready forces for wartime, national emergencies and other requirements. Its stated mission is to train for, and respond to, domestic emergencies and other missions as required by state law. Unless federally mobilized, ARNG units are commanded by their state executive, usually the governor.

Army Civilians support all components of the Army and have increasing responsibilities in the Generating Force. They are critical to supporting the Army's training, manning, power projection, equipping, medical support, support to Soldiers and Families, base support, acquisition and management.

Visit the Army website, www.army.mil/info/organization/, to learn more about how the Army is organized.

Army Rangers parachute over Fort Benning, GA (photo: Air Force Senior Airman Jason Epley).

Evolution of Army Sustainability

The Army's future operational environment is uncertain and complex due to changing demographics, globalization, shifting economic patterns, emerging energy demands, food and water scarcity, climate change, natural disasters, pandemics and competition in the cyber and space domains.[8] To help address these risks and uncertainties and preserve its strategic choices and operational flexibility, the Army has developed and advanced its concept of sustainability.

The Army Strategy for the Environment

In many respects, the Army's drive toward sustainability began just short of a decade ago with the establishment of its first sustainability plan at Fort Bragg, NC. Resource constraints—including training land use restrictions because of encroachment (the expansion of Civilian activities near training areas) and protection of endangered flora and fauna—raised questions as to Fort Bragg's ability to continue to conduct mission training. In 2001, Sustainable Fort Bragg was launched to cooperatively solve the problems associated with those constraints. By early 2003, it led to the formation of the Sustainable Sandhills as a regional partnership with the surrounding counties. Since 2001, the Army has conducted similar goal-driven sustainability planning at 30 installations throughout the continental United States (CONUS) and outside the continental United States (OCONUS). The sustainable Army works to accomplish its mission while building healthy environments and stable communities, ensuring the needs of the force and the Nation are met—now and in the future.

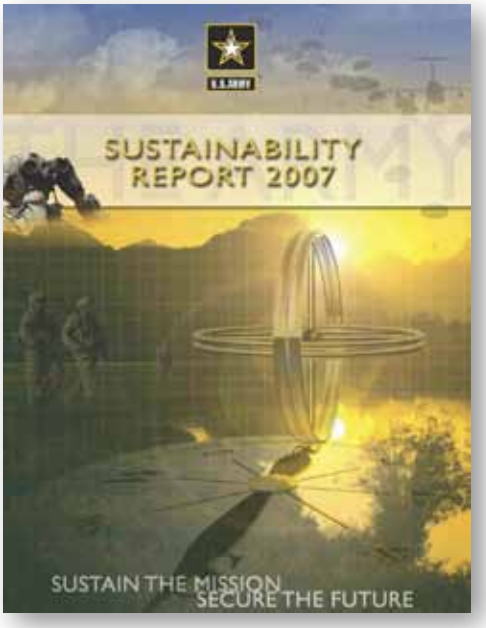
Triple Bottom Line-Plus

In 2004, the Army leveraged its experience to establish *The Army Strategy for the Environment*,[9] which has served as the foundation for Army sustainability programs. It introduced the concept of mission, environment and community—plus the economic benefit—and established six goals that influenced Army decisions in the years that followed, creating a structure that links the Army's strategic objectives with the actions needed to achieve them (as envisioned and directed in the Government Performance and Results Act and the Chief Financial Officers Act). These long-term goals guided Army policy, planning, programming and implementation to realize the benefits of sustainability:

- Foster an ethic within the Army that takes us beyond environmental compliance and to sustainability.
- Strengthen Army operational capability by reducing our environmental footprint through more sustainable practices.
- Meet current and future training, testing and other mission requirements by sustaining land, air and water resources.
- Minimize impacts and total ownership costs of Army systems, materiel, facilities and operations by integrating the principles and practices of sustainability.
- Enhance the well-being of our Soldiers, Civilians, Families, neighbors and communities through leadership in sustainability.
- Use innovative technology and the principles of sustainability to meet user needs and anticipate future Army challenges.

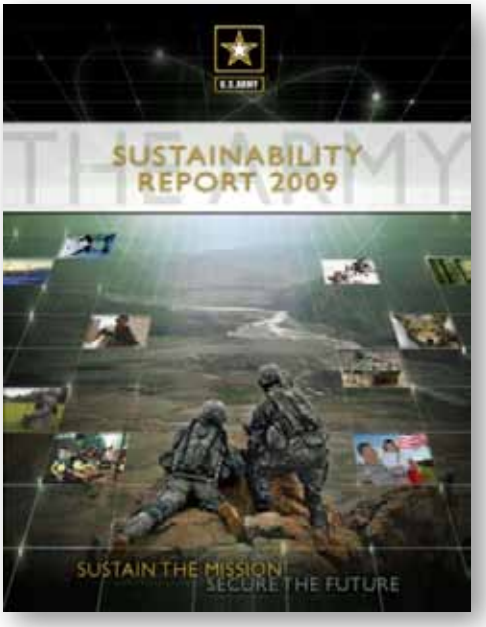
In 2008, the Army released its first annual sustainability report, ASR07, to engage stakeholders and furnish information on its progress. This report was followed by ASR09, released in early 2010. Each report included

descriptions of programs, performance highlights and an index to GRI. In October 2009, President Obama signed Executive Order (EO) 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," which expanded on the energy reduction and environmental performance requirements of EO 13423 and, for the first time, directed federal agencies to prepare strategic sustainability performance plans (SSPPs) and to inventory and report their greenhouse gas (GHG) emissions.[10] EO 13514 also requires agencies to designate senior sustainability officers. In December 2009, the Secretary of the Army appointed the Under Secretary, Dr. Westphal, as the Army senior sustainability official. The Under Secretary serves on an interagency Steering Committee on Federal Sustainability, prepares targets for agency-wide GHG reductions, submits Army progress on implementing the SSPP to the Department of Defense (DoD) and reports annually on progress.



Army Sustainability Report 2007

The Army began to consider both its role in contributing to global climate change and how the effects could affect its mission. In 2009, before the Senate Environment and Public Works Committee, the Deputy Under Secretary of Defense for Strategy, Plans and Forces described climate change as generating new security challenges by straining limited resources and increasing the potential for humanitarian crisis.[11] The 2009 *Army Posture Statement* agrees, recognizing climate change as a global trend. Adaptation will be part of DoD's long-term strategy to manage these challenges.[12] USACE recognized this risk and, in July 2009, released guidance on applying sea-level change scenarios to Civil Works planning.[13]



Army Sustainability Report 2009

Energy is a key element of sustainability, essential to Army operations at home and abroad, whether in the form of electricity to power barracks, offices and depots; mobility fuels for tactical equipment; or fuels to support expeditionary forces. The availability, cost and transportation requirements of fossil fuels create a substantial financial and logistical burden and energy security concern. Energy conservation and use of renewable energy sources also support energy independence and long-term energy security, while reducing the Army's emission of GHGs that contribute to global climate change.

To help reach its energy objectives, the Army published the AESIS in January 2009.[14] This plan establishes five strategic energy security goals on which the Army will focus moving forward (see page 27). The Army has already begun to increase energy efficiency and reduce energy demand by producing more efficient materiel; designing, constructing and operating more efficient facilities; utilizing renewable sources of energy (such as wind, solar and biomass) where available; and incorporating energy considerations into Army doctrine. These initiatives reduce operating costs, increase operational readiness and lessen the potential for casualties. Through acquisition, training, doctrine and base operations, the Army will accelerate efforts to increase energy efficiency, utilize alternate energy

sources, improve energy security and incorporate "clean" and intelligent strategies in acquisition and procurement, infrastructure planning, design and construction.

In 2009, the Army initiated development of the ASCP. Although the plan was not finalized until early 2010, the tenets of sustainability were framed and the foundation established to institutionalize sustainability as an organizing principle across the Army's missions and functions. The ASCP serves as the Army's SSPP and as a road map to align and integrate ongoing efforts with the new and necessary plans and programs to address DoD's objectives in implementing EO 13514. The ASCP will cross four lines of operation (materiel, readiness, human capital and services and infrastructure) to strengthen the Army's national security role and directly support the Army's Strategic Imperatives: sustain, prepare, reset and transform. Identification of tasks and their delegation to offices of primary and coordinating responsibility (OPR/OCR) instill management and execution of sustainable practices throughout the Army, while maximizing operational capability, resource availability and well-being.

Figure 4 illustrates the correlation of sustainability drivers, the ASCP and the flow of sustainability metrics and information to stakeholders. It also shows the crucial role of the ASR in actively communicating sustainability progress to a broader audience. With the ongoing evolution of sustainability, the ASR will continue to adapt as a key communication tool, informing Army and external stakeholders about Army sustainability initiatives and accomplishments.

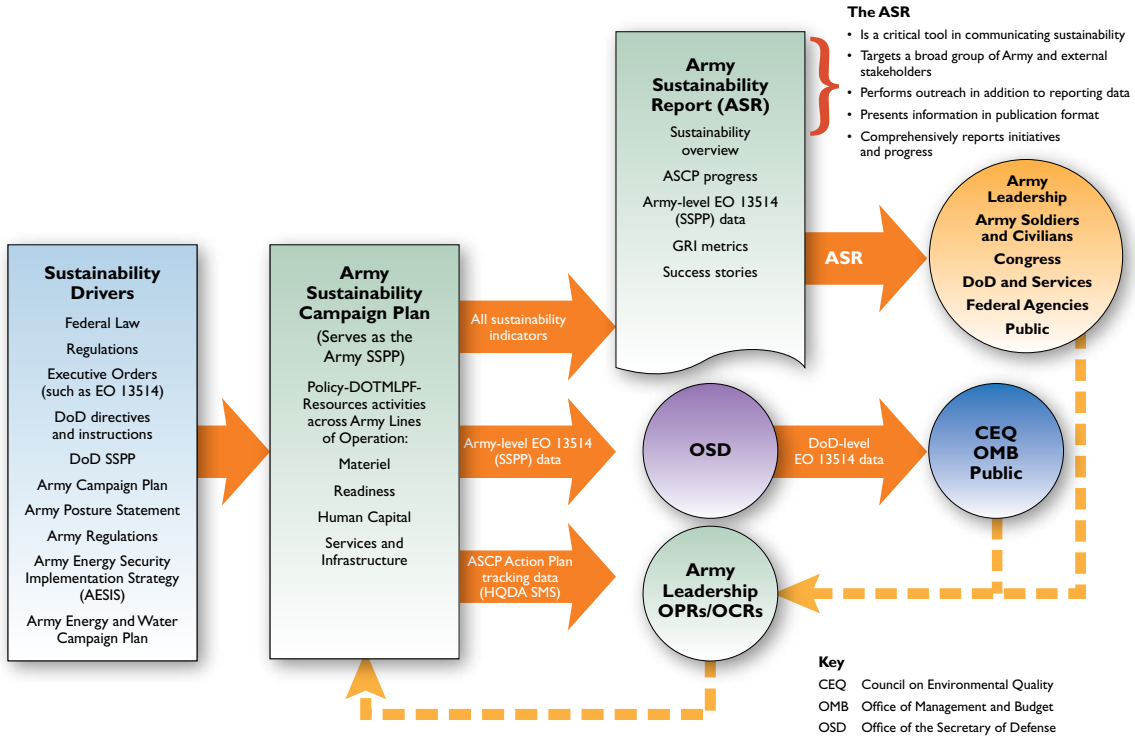


Figure 4. Communicating Army Sustainability

Doing the right thing is good. Doing the right thing for the right reason and with the right intention is even better.

–Army Leadership Manual

Monitoring Progress in Army Sustainability

In 2009, the Army framed four tenets of sustainability that serve as the basis for the ASCP:

- Developing, producing, fielding and sustaining materiel that is more energy efficient, is capable of using renewable energy resources, minimizes the use of hazardous materials and generates less waste.
- Ensuring the Army has sufficient access to training and testing resources, and incorporating sustainability into operational planning and execution, so the Army can continue to effectively train today and in perpetuity.
- Expanding the Army commitment to sustainability by instilling sustainable practices into all levels of Soldier and Civilian education programs.
- Providing services and operating facilities in a manner that reduces consumption of energy, water and other resources; promotes the use of renewable energy sources; enhances quality of life; and continues to protect the environment.

Moving forward, these tenets for materiel, readiness, human capital and services and infrastructure will serve as a road map to relate ongoing efforts with new ones, including those directed by EO 13514. Because efforts will be distributed across many Army organizations and programs, progress in implementing the ASCP and achieving the directives of EO 13514 will be monitored and reported through various federal, DoD and Army systems and schedules. The ASR aggregates this information in a single, comprehensive report of relevant Army activities and achievements, as well as progress with GRI and other sustainability indicators.

ASR10 is oriented to the four tenets of sustainability. It introduces and defines the terms "materiel," "readiness," "human capital" and "services and infrastructure" and reports our associated actions and progress in 2009. Each section of the report addresses topics of note, reports metrics and highlights successes. The introduction to each section includes a brief summary of relevant requirements of EO 13514, the DoD SSPP[15] and ASCP, which the Army must fulfill in coming years. Although these requirements were not finalized until late 2009 and early 2010, the Army was well positioned and, in many cases, already moving forward to address them in 2009, the reporting period of ASR10. Green boxes throughout the report feature stories, installation examples and quotations. Blue boxes highlight specific EO 13514 requirements for energy, water and sustainable buildings and Army progress that will further shape our activities in 2010 and beyond. The annex details GRI indicators for the Army.

Table 1 summarizes key sustainability trends and directs readers to appropriate sections of the report. It shows ASR10 performance trends from FY04 to FY09 in a partial performance baseline. It is based on a subset of the economic, environmental and social responsibility performance metrics recommended by GRI's G3 and *Sector Supplement for Public Agencies.*

The first column includes a page number to guide the reader to the location of the trend description in the ASR. The "FY09" annual performance column includes data from FY09 and calendar year (CY) 2009, reflecting the original reporting time frame in the source documentation. In addition, the "FY09" column has a few metrics that include data reported from CY08, in particular, hazardous waste (HW) and toxic release inventory (TRI) data from CY08, which were published in the *Fiscal Year 2009 Defense Environmental Programs Annual Report to Congress* (DEP ARC)[16]. The Army recognizes that these trends represent a partial measure of progress toward its strategic sustainability goals and will continue to improve its data collection and reporting efforts to better understand this progress.

Table 1. Army Sustainability Trends, FY04–09

ASR page	Metric definition (units)	FY04	FY05	FY06	FY07	FY08	FY09	FY09 goal[a]	FY08–09 change (%)
33	Net cost of Army operations ($ billion)[b]	$135.8	$146.4	$164.6	$168.9	$190.5	$206.4	—	8.3
33	Total Army end strength (thousands)[b]	1,046.59	1,014.91	1,041.66	1,064.61	1,101.03	1,116.73	1,115.60	1.4
34	Active Army end strength (thousands)[b]	499.54	492.73	505.40	522.02	543.65	553.04	552.40	1.7
34	USAR and ARNG end strength (thousands)[b]	547.05	522.18	536.26	542.59	557.38	563.69	563.20	1.1
34	Army Civilian workforce (thousands)[b]	227.16	235.65	239.00	250.00	290.00	273.43	—	-5.7
25	Total acres permanently protected by Army Compatible Use Buffer (ACUB) partnerships[c,d]	22,431	28,419	63,370	81,587	96,275	120,607	—	25.3
48	Environmental funding ($ million)[e,f]	$1,456	$1,467	$1,454	$1,493	$1,520	$1,142	—	Note f
48	Cleanup—environmental remediation ($ million)[e,f,g]	$742.8	$762.1	$803.7	$801.3	$838.8	$528.9	—	Note f
48	Compliance, pollution prevention, conservation ($ million)[e,g]	$713.4	$704.5	$650.2	$691.3	$681.2	$613.0	—	-10.0
49	Percentage of facilities with Environmental Management System (EMS) fully implemented[e,h]	Note [h]	Note [h]	Note [h]	Note [h]	14.1%	38.2%	—	24.1
45	Integrated Strategic and Sustainability Planning (ISSP)	7	12	13	16	21	30	—	42.9
48	Army New Enforcement Actions (ENFs)[e]	89	91	101	94	130	75	—	-42.3
50	Solid Waste (SW) and Construction and Demolition (C&D) debris generated (million tons)[e,i]	2.76	2.14	2.33	2.83	2.25	2.28	—	1.3

ASR page	Metric definition (units)	FY04	FY05	FY06	FY07	FY08	FY09	FY09 goal[a]	FY08–09 change (%)
50	Overall SW and C&D debris recycled rate[e,i]	57%	45%	59%	65%	58%	60%	—	2.0
22	HW disposal (million lb by CY)[e,j]	33.39	45.71	63.70	45.00	76.50	54.74	—	-28.4
21	TRI releases (million lb by CY)[e,j]	21.48	18.87	18.76	23.87	21.96	25.07	—	14.2
42	% new Military Construction (MILCON) 30% more energy efficient than American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standards[k]	Note l	Note l	Note l	Note l	Note l	Note l	100%	Note l
48	Installations with up-to-date Integrated Natural Resources Management Plan (INRMP)[e]	98%	99%	98%	98%	98%	62%	100%	-35.6
37	Army facility water use (billion gallons)[k,m,n]	66.15	45.93	43.4	45.2	45.9	58.2	—	26.8
37	Facility energy use intensity (Btu/gsf)[k]	Note o	Note o	Note o	91,873	89,802	93,051	—	3.6
32	Military accident fatalities rate (per 1,000 service members)[p]	0.37	0.44	0.37	0.37	0.29	0.24	—	-17.2
32	Army Civilian lost time/ fatal claims (per 1,000 Civilians)[p]	19.90	6.79	7.75	7.66	7.06	6.17	—	-12.6
9	Retention—Active, Reserve, National Guard (thousands)[b]	123.35	119.80	126.61	127.26	120.05	116.22	101.21	-3.2
9	Recruiting—Active, Reserve, National Guard (thousands)[b]	148.09	142.99	175.06	174.06	169.86	145.74	140.20	-14.2
30	Number of Community Covenants signed[q]	Note q	Note q	Note q	Note q	85	338	—	297.6
45	Visits to Corps recreational areas (millions)[b,r,s]	122	122	131	132	137	132	127	-3.6

ASR page	Metric definition (units)	FY04	FY05	FY06	FY07	FY08	FY09	FY09 goal[a]	FY08–09 change (%)
48	Fines and penalties assessed (thousands)[e]	$903.0	$430.2	$947.0	$347.8	$453.2	$552.1	—	21.8
32	Army accidents[t]	2,191	2,440	2,550	2,473	3,031	2,659	—	-12.3
32	Army fatalities[t]	264	299	240	250	210	173	—	-17.6
32	Army accidents and fatalities[t]	2,455	2,739	2,790	2,723	3,241	2,832	—	-12.6
32	Army ground accidents[t]	2,028	2,224	2,316	2,270	2,821	2,465	—	-12.6
32	Army ground fatalities[t]	252	265	208	213	196	161	—	-17.9
32	Army personal-owned vehicle accidents[t]	432	418	443	477	560	487	—	-13.0
32	Army personal-owned vehicle fatalities[t]	132	144	128	116	129	110	—	-14.7
32	Army aviation accidents[t]	163	216	234	203	210	194	—	-7.6
32	Army aviation fatalities[t]	12	34	32	37	14	12	—	-14.3

Note:

[a] Not all metrics have an established goal.

[b] Army FY05–09 Annual Financial Statements.

[c] The data are reported annually in reports located at aec.army.mil/usaec/acub/index.html.

[d] The FY08 total was previously reported as 95,962 acres in ASR09; it was changed to 96,275 to reflect the total found in the ACUB Year-end Summary for FY08 at aec.army.mil/usaec/acub/index.html.

[e] DEP ARC, FY04–09.

[f] ASR07 and ASR09 include formerly used defense sites (FUDS) funding in the total environmental compliance and total environmental funding counts. Although the Army is the executive agent for FUDS, this program is funded through DoD. The FY09 DEP ARC moved FUDS from the Army-specific totals. A percentage change since FY08 cannot be provided because the FY08 funding level includes FUDS.

[g] In ASR07 and ASR09, FY04–08 base realignment and closure (BRAC) data were compiled with compliance, conservation and pollution prevention totals, but for FY04–09 totals in ASR10, BRAC reported under environmental restoration to maintain consistency with FY04–09 DEP ARCs; environmental funding totals for FY04–08 did not change.

[h] In FY07, the Office of the Federal Environmental Executive established new standards for EMSs, including external audits. The previous metric measured those with EMSs in place, 100% in FY07.

[i] For FY09, ASR includes CONUS and overseas.

[j] The figures were reported on a CY basis, but shown in the following fiscal year.

[k] The DoD FY04–09 Annual Energy Management Reports were clarified with facility energy intensity totals from personal communications with energy engineer Randy Smidt, Program Manager for Energy Sustainability, Headquarters Department of the Army.

[l] The FY07 report counted new construction attaining Leadership in Energy and Environmental Design (LEED) standards; in FY08–09, the Army required buildings to be designed 30 percent more energy efficient than ASHRAE Standard 90.1 2004. The Army is currently validating these designs.

[m] The FY05 and FY06 Army facility water use totals are from Army FY05 and FY06 Annual Energy Reports: army-energy.hqda.pentagon.mil/archive/.

[n] The FY04 and FY05 Army facility water use totals are reported in millions, but converted to billions for this report; the number of significant figures for FY06 and FY07 changed to reflect how data were reported in historical source documents.

[o] The metric is not included in public FY04–06 DoD Annual Energy Management Reports.

[p] US Army accident information, Army Historical Statistical Report, FY98–09: https://safety.army.mil/statisticsdata/ARMYSTATISTICSREPORTS/tabid/373/Default.aspx.

[q] This program began in 2008.

[r] USACE Civil Works, FY09 US Army Annual Civil Works Financial Statement.

[s] Personal communications on changes to annual financial statement data.

[t] Historical Army accident and fatality data were not previously available publicly, but now are; see https://safety.army.mil/portals/statisticsdata/public_reports/total_army/ArmyAccidentStatisticsHistoricalData.pdf.

Materiel

Materiel consists of equipment, weapons systems and supplies used by the Army. It includes items such as ships, tanks, self-propelled weapons, aircraft and related spares, repair parts, ammunition, clothing, meals and a host of other items necessary to equip, operate, maintain and support military activities (excluding real property, installations and utilities).[17] *To be sustainable, the Army must develop, produce, field and sustain materiel that is more energy efficient, that minimizes the use of hazardous materials and that minimizes waste and other negative impacts on the welfare of Soldiers, workers and the environment.*[18]

Sustainability requires planning for the long term—reviewing the true cost of the Army's activities and materiel on the mission, environment and community. It also includes reducing the logistics footprint while improving operational security and putting fewer Soldiers at risk. The Army is minimizing impacts and total ownership costs through integration of sustainable practices into the entire materiel life cycle, from production and fielding through operation and ultimate disposal. Table 2 identifies some of the sustainability requirements associated with materiel that were in development in 2009. Reporting for these requirements will be expanded in 2010.

The following subsections describe FY09 Army activities and accomplishments related to integrating sustainability into the materiel life cycle through TRI reporting, HW reduction and Green Procurement (GP).

Table 2. Looking Forward—Materiel-Related Sustainability Requirements

EO 13514	DoD SSPP	ASCP
· Reduce petroleum consumption · Minimize acquisition, use and disposal of toxic and hazardous chemicals · Implement source reduction to reduce waste and pollutants · Decrease use of chemicals directly associated with GHG emissions · Report in conformance with sections 301-313 of EPCRA · Procure Energy Star and FEMP-designated electrical equipment · Ensure new contracts require environmentally preferable products and services · Pursue opportunities with vendors and contractors to reduce GHG emissions, use low- GHG-emitting vehicles and optimize agency fleets · Ensure procurement preference for EPEAT-registered electronic products · Procure recycled paper	· Reduce vehicle petroleum use · Reduce releases of toxic chemicals · Reduce GHG emissions · Conduct procurement sustainably	· Implement the AESIS · Implement the *Toxic & Hazardous Chemical Reduction Plan* for materiel · Review and evaluate additional chemicals for the Army's *Toxic & Hazardous Chemical Reduction Plan*. Establish new baselines and targets. · Revise acquisition and procurement policy and practices to instill sustainability; establish a KPP · Utilize the sustainability KPP and life-cycle costing in all acquisition and procurement decisions · Develop and fully implement green procurement (GP) policies

Note: FEMP = Federal Energy Management Program; EPEAT = Electronic Product Environmental Assessment Tool; EPCRA = Emergency Planning and Community Right-to-Know Act; KPP = key performance parameter.

Note: The requirements in the table above have been summarized. Consult the three relevant source documents identified in the table above for exact language.

Toxic Release Inventory (TRI)

The TRI provides information on toxic chemicals (measured in millions of pounds by CY) that enter the environment at a facility or are transferred off site. The purpose of TRI reporting is to establish an inventory of chemical releases in a publicly accessible database, TRI Explorer (www.epa.gov/triexplorer),which includes information on routine and accidental releases of chemicals into the environment. Each agency submits annual TRI information to the Environmental Protection Agency (EPA), which maintains TRI Explorer.

In CY08, the Army released (or transferred) 25.07 million pounds of TRI chemicals, including nitrate compounds, copper, lead compounds, lead, ethylene glycol, zinc, dichloromethane, hydrochloric acid, copper compounds and aluminum. Since CY07, TRI releases increased 14.2 percent. The chemicals come primarily from operation of ammunition plants, depots and ranges and their associated activities such as energetic manufacturing, munitions manufacturing and demilitarization and vehicle maintenance. The increase can be attributed to support of the ongoing warfighting efforts in Iraq and Afghanistan.[19,20]

The Army's TRI reporting is in accordance with the Emergency Planning and Community Right-to-Know Act (EPCRA).

Looking Forward – EO 13514: Pollution Prevention

§2(e) Promote pollution prevention and eliminate waste by: (x) reporting in accordance with the requirements of sections 301 through 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (42 U.S.C. § 11001 et seq.).

Green Warriors—Addressing Sustainability in Contingency Operations

In contingency operations, environmental issues pose a risk to Soldier and local communities' health and safety. Further, the increased involvement of the Army in post-conflict stability operations and reconstruction has heightened the importance of environmental and cultural considerations in operational costs and achievement of mission objectives. The 2008 RAND report, Green Warriors: Army Environmental Considerations for Contingency Operations from Planning Through Post-Conflict, suggests that a comprehensive approach that includes policy, culture, planning, training and investment contributes to mission success.

The Army recognizes that it can no longer address environmental considerations ad hoc: they need to be part of a comprehensive systems approach based in sustainability. The Army is working to operationalize sustainability beyond the installation and onto the battlefield, where addressing environmental impacts will help sustain the mission.

Camp Anaconda in Iraq is an example of a comprehensive planning approach led by sustainability that has reduced risk to Soldiers and Civilians. Waste in contingency operations has become an increasing problem as the operations in Afghanistan and Iraq continue. The burn pit at Camp Anaconda, like many others, was collecting everything from engines and plastic to medical waste, risking the health of Soldiers and Civilians from air pollution and posing a theft security risk. To address this issue, the base commander created a storage area to hold excess materials other than trash for units departing the forward operating base (FOB). This single storage area reduced the potential for combustion of toxic material (previously dumped in the burn pit), saved money for units needing equipment—by allowing the reuse of items still viable and avoiding the fuel costs for resupplying—and protected the lives of convoy operators.

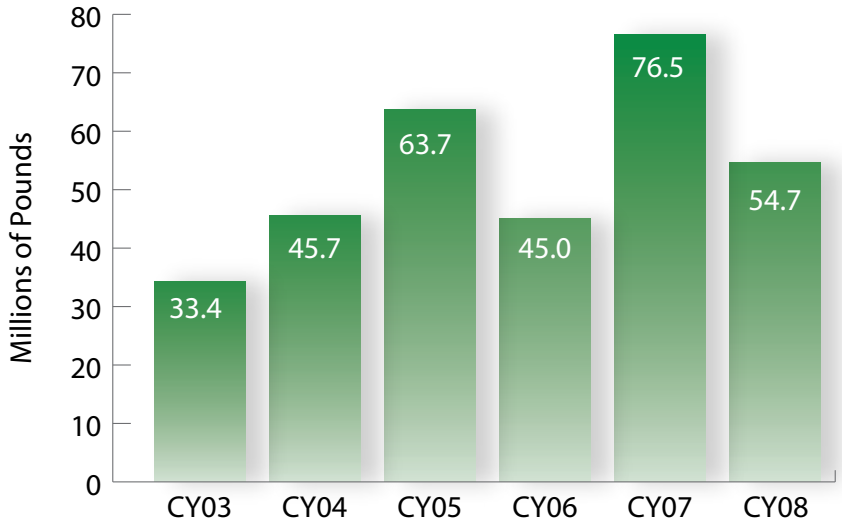
Movement away from open pit burning is consistent with new waste disposal guidance. The Multi-National Corps–Iraq (MNC-I) issued revised environmental guidance in April 2009. Unless authorized by the base commander in writing, MNC-I Environmental Standard Operating Procedure 2009 explicitly forbids open burning. Similarly, US Forces–Afghanistan (USFOR-A) issued environmental guidance in September 2009, with a goal of nearly eliminating the need for incineration (including burn pits). Shortly thereafter, Congress enacted the National Defense Authorization Act (NDAA) for FY10 in October 2009, which "requires DoD to prescribe regulations prohibiting the disposal of covered waste in open-air burn pits during contingency operations except in circumstances in which the Secretary of Defense determines that no alternative disposal method is feasible."[21]

Soldiers hook up sling loads to a CH-47 Chinook helicopter at Forward Operating Base Altimur in the Logar province of Afghanistan (photo: SPC Derek L. Kuhn).

Hazardous Waste (HW)

In CY08, the Army disposed of 54.7 million pounds of HW, a 28.4 percent decrease from CY07 (Figure 5). Despite this 1-year drop, the CY08 HW disposal was larger than in 3 of the previous 5 years, so the trend in HW disposal is not necessarily downward.[22]

Army industrial installations in support of Operations Iraqi Freedom and Enduring Freedom generated larger amounts of HW over the years in response to increased operational tempo. This change in tempo increased equipment repair demand, maintenance, reconstruction and production. Net costs are not an adequate representation of demand for equipment. The Army seeks solutions that support the needs of operations while reducing HW.[23]



Source: FY08 DEP ARC (CY03–04) and FY09 DEP ARC (CY05–08); FY09 DEP ARC totals converted from tonnage to million pounds.

Figure 5. HW Disposal, CY03–08 (States, Territories and Overseas)

The Army reported a decrease in pounds of HW generated in CY08.

Looking Forward – EO 13514: Hazardous Waste

§2(e)(v) Promote pollution prevention and eliminate waste by: … reducing and minimizing the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of.

Green Procurement (GP) Program

DoD established a GP policy in 2004 (updated in 2008), providing guidance on the acquisition of environmentally preferable products and services. In November 2006, the Army followed with a memorandum establishing its GP program.[24] In FY09, the *Army Installation Green Procurement Program Implementation Guide* was under development. The Guide will have Army-wide impacts by promoting sustainable purchasing and contracting that will result in the use of products that have lesser negative effects on Soldier/employee health and the environment. GRI economic public agency (PA) and environmental (EN) indicators PA11, PA13, PA14, EN7 and EN26 direct disclosure of GP activities (see Tables 5 and 6 in the annex).

As directed in the Army memorandum, "all Army organizations initiating contracting/procurement actions or credit card purchases will comply with GP requirements in order for the US Army to meet the DoD goal of 100 percent compliance with federal purchasing preference programs, and to support the Army Strategy for the Environment."

Working in tandem with Army affirmative procurement policy, GP requirements apply to all acquisitions, including individual purchases and the purchase and use of regulated products in the execution of federally funded contracts. Procuring and contracting organizations are also required to apply comprehensive procurement guidelines for purchasing items that contain recovered materials.

The Army GP program has the following objectives:

- Educate all appropriate Army employees on the requirements of federal "green" procurement preference programs, their roles and responsibilities relevant to these programs and the Army GP program and the opportunities to purchase green products and services.
- Increase purchases of green products and services consistent with the demands of mission, efficiency and cost-effectiveness, with continual improvement toward federally established procurement goals.
- Reduce the amount of solid waste generated.
- Reduce consumption of energy and natural resources.
- Expand markets for green products and services.

The Army policy and the Federal Acquisition Regulation require purchases of these products; however, the Army currently does not publicly report its status regarding the GP program. It provides information on its GP program to the Office of the Secretary of Defense (OSD), where it becomes part of the annual DoD Resource Conservation and Recovery Act (RCRA) section 6002 report to the Office of the Federal Environmental Executive. The EO 13514 requirement for 95 percent of new contracts to be sustainable will likely lead to more public reporting. GP is a very important GRI indicator, and the Army continues its efforts to track and report these purchases.

Looking Forward – EO 13514: Green Procurement

§2(e) Promote pollution prevention and eliminate waste by: … (iv) reducing printing paper use and acquiring uncoated printing and writing paper containing at least 30 percent postconsumer fiber; (viii) increasing agency use of acceptable alternative chemicals and processes in keeping with the agency's procurement policies;

§2(h) Advance sustainable acquisition to ensure that 95 percent of new contract actions … for products and services with the exception of acquisition of weapon systems, are energy-efficient … water-efficient, biobased, environmentally preferable … non-ozone depleting, contain recycled content, or are non-toxic or less-toxic alternatives.

Readiness

Readiness is the state of being prepared. The Army's readiness reflects its ability to fight and meet the demands of the National Military Strategy.[25] *It includes the capability of its personnel, weapons systems, equipment and other assets to perform their intended purpose. The Army must ensure that it has sufficient access to the training and testing resources on which readiness relies.*

The Army is taking the necessary measures to ensure that its personnel and equipment can continue to conduct challenging unit training that properly prepares them for any type of 21st century conflict. Table 3 identifies some of the sustainability requirements associated with readiness that were in development in 2009. Reporting for these requirements will be expanded in 2010.

The following subsections describe FY09 Army activities and accomplishments related to the use of sustainability to improve readiness, including the Sustainable Range Program (SRP), ACUB program and operational energy and water.

Table 3. Looking Forward—Readiness-Related Sustainability Requirements

EO 13514	DoD SSPP	ASCP
· Reduce petroleum consumption · Increase renewable energy and renewable energy generation on agency property · Use low-GHG-emitting vehicles, including AFVs, and optimize the number of vehicles in agency fleets · Reduce potable water consumption intensity · Implement water reuse strategies · Implement EPA's stormwater management guidance and achieve the objectives	· Reduce vehicle petroleum use · Increase use of renewable energy · Reduce potable water consumption	· Implement the AESIS · Establish the proponent and develop sustainable contingency operations · Develop sustainable contingency operations through Policy-DOTMLPF-Resources · Incorporate sustainability in policy and plans for support to COCOMs

Note: AFV = alternative fuel vehicle; DOTMLPF = Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities; COCOM = combatant command.

Note: The requirements in the table above have been summarized. Consult the three relevant source documents identified in the table above for exact language.

Fort Custer Training Center (FCTC) Wins the FY09 Secretary of the Army Environmental Award for Natural Resources Conservation

Training at FCTC (photo: US Army).

FCTC is a 7,500-acre installation that provides trained and ready forces to respond to state, local and regional emergencies. The installation, which trains 160,000 Soldiers annually, has significant natural features, including woodlands, wetlands and prairies; is a major migratory bird flyway and nesting site; and hosts several rare and at-risk communities. To manage the training land sustainably, the Natural Resources (NR) staff is integrated with FCTC's Facilities and Engineering, Range Control and Integrated Training Area Management offices. These offices jointly created a range complex master plan to meet mission, environmental and community needs.

FCTC proactively preserves training through the efforts of people like NR Specialist Michele Richards, who works as a Michigan climate policy fellow and makes recommendations to state and local governments to mitigate impacts from climate change.

FCTC success is rooted in collaboration: it has partnered with the Nature Conservancy, Southwest Michigan Land Conservancy, Kalamazoo Nature Center, Pierce Cedar Creek Institute and Western Michigan University. FCTC participates on local boards and committees, including the Michigan Stewardship Network, Michigan Invasive Plant Council, Kalamazoo River Watershed Council and Michigan Association of Conservation Districts. It also engages the community in its conservation efforts by teaching at the annual Envirothon, participating in National Public Lands Day, hosting a science field day and hosting 1,500 recreational visitors annually—including an annual Freedom Hunt for disabled veterans and wheelchair-bound individuals.

Sustainable Range Program (SRP)

The SRP maximizes the Army's ability to meet testing, training and mission requirements by conserving ranges and training lands. It does so by obtaining essential data on Army natural resources, managing these natural resources for multiple uses and educating the public on its training needs. GRI indicators EN11–EN15 direct users to disclose habitat protection efforts (see Table 11).

Army Compatible Use Buffer (ACUB) Program

In 2009, the Army continued the ACUB program to ensure range availability under increased encroachment from incompatible land uses.

Encroachment—changing patterns of land use and habitat growth that restrict the Army's ability to operate its installations and training areas—impedes the Army's ability to train Soldiers. Encroachment is also a concern for the communities outside the fence line, whose health, safety and quality of life could be affected by noise and other results associated with training activities. Through the ACUB program, the Army meets test, training and mission requirements by creating permanent buffer lands for its installations and managing its training lands to protect cultural resources and endangered species, air and water.

The ACUB program facilitates partnerships between the Army, conservation organizations, state and local governments and landowners to limit incompatible land use around Army installations and thus reduce restrictions on daily training activities. The ACUB program supports local and regional planning and sustainability efforts by working toward common goals and objectives.

Through the ACUB program, installations collaborate with partners to identify mutual land conservation objectives. ACUB partnerships are formalized through cooperative agreements with eligible partners. These agreements allow

the Army to contribute funds for the partner's purchase of easements or fee-simple conveyances from willing adjacent landowners. The partner retains the easement and provides for land management practices that protect, in perpetuity, the adjacent land use and conservation values compatible to protect the Army's mission. The partners meet their organizational objectives, such as natural resources conservation, hunting, agriculture, public recreation, cultural preservation, and other compatible uses, while limiting incompatible land use in the vicinity of the Army installation.

Some installations have pursued joint land use studies (JLUSs) through the Compatible Use Program run by the DoD Office of Economic Adjustment (OEA). This program encourages cooperative, and joint, land use planning between military installations and local governments—beyond conserving or preserving buffers. This includes amending land use planning documents, modifying local building codes and undertaking zoning and land exchanges.

In FY09, Camp Bullis created a 3,000-acre ACUB buffer, which complements the joint economic and nuisance measures of their JLUS with the City of San Antonio. The buffer objectives are to protect endangered species, primarily the Golden Cheeked Warbler, through off-site mitigation, and to acquire adjacent lands to limit residential development and its resulting ambient light pollution, which disrupts nighttime training activities. Partners for the ACUB include the Texas Parks and Wildlife Department and the Nature Conservancy. More detail on this and other ACUB projects are available under the Fact Sheets section of the ACUB website, aec.army.mil/usaec/acub.

Including Camp Bullis, expansions at other buffers, and new buffers at Fort Irwin and Camp Roberts in California, in FY09 the ACUB program permanently preserved 35,463 additional acres, bringing the total since the program began to 120,607 acres, an increase of 25.3 percent since FY08.

Operational Water and Energy Efforts

Sufficient supplies of water and energy help ensure the Army's continued operational capability by sustaining troops and enabling the production of materiel and operation and maintenance of systems. Improving efficiency and employing new technologies ensures readiness by reducing operational costs and vulnerability to supply shortages. Moreover, such efforts reduce the logistical burden of hauling water and fuel that may put Soldiers at risk during combat operations by reducing the number of convoys needed. The Army recognizes the need for innovative solutions.

The Army must meet the needs of Soldiers and maintain operations by ensuring adequate water storage, quality, distribution and treatment during contingency and humanitarian operations. Among the approaches considered by the Army are purifying and bottling water on site, employing gray water reuse systems and treating water. At FOBs, the Army is investigating the use of gray water systems to reduce the amount of water used. These systems recirculate water used once in sinks or showers for a second, nonpotable purpose.

For humanitarian operations, stability operations and when assisting foreign militaries, the Army and USACE activities support clean water projects, including solar powered and standalone water filtration systems. In 2009, the Army worked with East African Community partner nations in an exercise that tested the ability of the participants to provide clean water to hundreds of Soldiers. The US Army demonstrated its Reverse Osmosis Water Purification Unit and worked with these other nations to facilitate transportation of the water. This exercise was part of Natural Fire 10, a routine exercise between these partners to collaborate on a humanitarian assistance mission.[26]

Operational factors also drive the need for energy efficiency and the use of alternative sources of energy. Energy security for the Army means preventing the loss of access to power and fuel sources (surety), ensuring resilience in energy systems (survivability), accessing alternative and renewable energy sources available on installations (supply), providing adequate power for critical missions (sufficiency) and promoting support of the Army's mission, its community and the environment (sustainability).

In January 2009, the Army published the AESIS. The AESIS addresses the energy security challenge through newly established central leadership and integrated, goal-driven energy activities. The Army's Senior Energy Council (SEC) and Deputy Assistant Secretary of the Army for Energy and Partnerships, DASA(E&P), were formed to integrate and focus energy activities throughout the Army.

The AESIS presents the Army's energy security vision, mission and goals, with direction on the development of objectives and metrics to gauge progress toward them. These energy security goals are to be achieved without reducing operational capability or hindering Army mission accomplishment:[27]

- *Reduced energy consumption*. Reduce the amounts of power and fuel consumed by the Army at home and in theater and help minimize the logistical fuel tail in tactical situations by improving fuel inventory management and focusing installation consumption on critical functions.
- *Increased energy efficiency across platforms and facilities*. Raise the energy efficiency for generation, distribution, storage and end use of electricity and fuel for system platforms, facilities, units and individual Soldiers and Civilians. This goal relates to the productivity of a system on the basis of energy requirements and supports the ability to make informed tradeoffs in development, engineering and deployment of weapon systems.
- *Increased use of renewable and alternative energy*. Raise the share of renewable or alternative resources for power and fuel use, which can decrease dependence on conventional fuel sources. This goal also supports national goals related to renewable or alternative energy.
- *Assured access to sufficient energy supplies*. Improve and maintain the Army's access to sufficient power and fuel supplies when and where needed. Vulnerabilities to external disruption of power and fuel sources should be minimized, and the potential for industry partnerships to enhance energy security and generate net revenues for the Army should be considered.
- *Reduced adverse environmental effects*. Reduce harmful emissions and discharges from energy and fuel use. Conduct energy security activities in a manner consistent with Army environmental and sustainability policies.

The AESIS is not the beginning of the Army's energy security program, but it establishes energy security as an enterprise-wide priority with appropriate leadership and management

Solar lighting at Area Support Group-Qatar (photo: COL Anthony Haager).

Members of the Arkansas ARNG ADT examine a wheat crop near Shahr-e-Safa, Afghanistan, during meetings with local farmers (photo: US Army).

guidance. The Army already has ongoing plans and activities that support the implementation of the AESIS. Examples range from procuring electric and hybrid-electric vehicles for (peacetime) use at installations to developing hybrid-electric vehicles for tactical (wartime) use in theater. These are just two ways the Army is minimizing impacts and demonstrating its commitment to a sustainable environment. Future energy activities will build on these efforts to address the Army's evolving energy security needs.

Army National Guard (ARNG) Agribusiness Development Team

The Army recognizes that leveraging public, private and intergovernmental partnerships enables the advancement of innovative solutions, strengthens community relationships and improves operational capabilities. The Army is moving forward to ensure a consistent approach for creating effective partnerships across its lines of operation, including those in contingency operations.

Colonel Martin A. Leppert observed that 30 years of war had decimated Afghanistan's agribusiness infrastructure, including irrigation, and much former knowledge had been lost. Working with the local Afghan population, the Army found that though only 12 percent of the land is arable, agriculture is important and held dear as part of the past and the nation's cultural identity.

The Agribusiness Development Teams (ADTs) have worked with their Afghan counterparts to build local slaughter facilities, auction barns, demonstration farms and veterinary clinics. The teams work with agricultural universities to mentor staff members and students. Working with local organizations allows the Army to have a lasting impact. Further, armed with local knowledge, the teams can ensure that these improvements are within the capabilities of the Ministry of Agriculture, Irrigation and Livestock.

Human Capital

The Army's most valuable resource is human capital—the people who make up the Army. People at every level operate as a team to accomplish the Army mission, and leadership is the catalyst that makes the decisive difference. Army commitment to sustainability is reflected in its culture, through incorporation of sustainability in Army values and Soldier and Civilian education programs at every level, from basic training to senior service colleges. Army leaders are working to ensure that the principles of sustainability inform their words and actions, and recognize their subordinates' activities and efforts that increase Army sustainability. Civilian training and advancement are also essential elements of integrating sustainability into the daily decisions of the Army workforce.[28]

In FY09, the Army continued to improve the sustainability of its human capital: Soldiers, Civilians and their Families. In December 2009, to better focus and coordinate the Army's sustainability efforts, the Secretary of the Army appointed the Under Secretary of the Army, Dr. Joseph Westphal, as the Army senior sustainability official with responsibilities and authorities in accordance with EO 13514. Table 4 identifies some of the sustainability requirements associated with human capital that were in development in FY09. Reporting for these requirements will be expanded in FY10.

The Army's most valuable resource is its people. The Army recognizes the extraordinary service provided by its Soldiers, Families and Civilians.

Table 4. Looking Forward—Human Capital-Related Sustainability Requirements

EO 13514	DoD SSPP	ASCP
· Designate a senior sustainability officer · Develop policies and practices to decrease scope 3 GHG emissions	· Properly certify DoD personnel and contractors who apply pesticides · Reduce GHG emissions associated with employee air travel and commuting	· Incorporate sustainability considerations into organizational plans · Establish a sustainability coordinator on the Enterprise Task Force · Incorporate sustainability into all appropriate professional military and civilian training · Promulgate enterprise planning processes that integrate sustainability across organizational lines and functional plans · Establish and leverage partnerships with academia and communities to support a sustainable workforce · Develop goals, objectives and metrics · Implement the sustainability strategic communication plan · Develop fiscal policy that incentivises sustainable investments · Incorporate sustainability language into doctrine · Achieve GHG reduction goals · Revise and update Army Pollution Prevention Strategic Plan

Note: The requirements in the table above have been summarized. Consult the three relevant source documents identified in the table above for exact language.

The following subsections describe FY09 Army activities and accomplishments related to human capital, including progress in addressing the quality of life of Army Families and communities while also reducing risk and injuries to Soldiers and Civilians. Examples of Army partnerships are also discussed.

Army Community Covenant (ACC)

To further enhance well-being, the Army continually seeks partnerships and closer relationships with the communities around its installations to the benefit of Soldiers, their Families, Civilians and the public.

The ACC is a formal commitment of support to Soldiers and Families from a state or local community. Since the program began in 2008, local communities and their installations have signed 338 ACCs. In August 2009, the Army launched a new Community Covenant website (www.army.mil/community), which provides resources for Soldiers and their Families and community organizations. It lists local best practices by state as well as support programs outside the gates of Army installations. The website also features information on education, employment and survivor support. In FY09, the Army signed a total of 93 new ACCs. Improving awareness of and access to existing programs helps Soldiers and their Families receive additional support and increase adoption of best practices.[29]

Army Family Covenant (AFC)

The AFC, launched in 2007, institutionalizes the Army's commitment to provide Soldiers and their Families a quality of life commensurate with their level of service to the nation. Through the AFC, the Army is committed to improving quality of life by standardizing Family programs; increasing accessibility and quality of healthcare; improving housing; ensuring excellence in child, youth and school services; expanding education and employment opportunities; expanding opportunities for single Soldiers; and implementing the Community Covenant.

These goals have resulted in several programs, including the support of Family Readiness Groups and Assistants, licensed Military Family Life Consultants and Survivor Outreach Support. The Warrior Transition Command, established in 2009, addresses support services for more than 8,000 warriors

COL Laura Richardson, Fort Myer Military Community garrison commander, and Jay Fisette, vice chairman of the Arlington County Board, unveil a copy of the Army Community Covenant, August 2009 (photo: US Army).

> It's incumbent upon us to look in our own back yards … and to figure out who's out there serving our country and what kind of support they need. We need to make sure—as a community—that we're coming together around those Families.
>
> —Michelle Obama, Fort Bragg, March 12, 2009

in transition. In FY08–09, 127 child development centers and 23 youth centers were constructed and operating hours were increased. Families of deployed Soldiers also receive discounts and 16 hours of free respite child care per month.

Educational benefits include a post-9/11 GI bill with transferability to a Spouse or a Family member, and, $6,000 for post-secondary education and training for Spouses.

Army Campaign Plan for Health Promotion, Risk Reduction and Suicide Prevention

In FY09, more Soldiers died as a result of high-risk behavior—including drinking and driving, drug overdoses and suicide—than died in combat. In FY09, the Vice Chief of Staff, Army, created the *Army Campaign Plan for Health Promotion, Risk Reduction and Suicide Prevention*. This plan takes a holistic approach to improving the physical, social, mental and spiritual well-being of Soldiers, Families and Civilians within their community.

The plan initiated Comprehensive Soldier Fitness, realigned garrison programs, increased care provider services, increased resources for deployment and redeployment integration and enhanced treatment of post-traumatic stress disorder and mild traumatic brain injury.

Comprehensive Soldier Fitness coordinates with Army Health Promotion and Wellness Services to provide primary prevention programs and initiatives that sustain healthy lifestyle choices and eliminate preventable health issues that contribute to illness and injury and intensify the effects of stress. Efforts will concentrate on increasing the proportion of Soldiers who maintain a healthy weight, engage in regular physical activity and embrace a healthy lifestyle. By focusing on these areas, it is expected that Soldier readiness, work performance, wellness and sustainability will be supported and optimized.

Comprehensive Soldier Fitness promotes a proactive approach to health: prevention instead of intervention.

Matt Green, Camp Lemonier (Djibouti) Fire Department, explains how to perform cardiopulmonary resuscitation for the Combined Joint Task Force—Horn of Africa during Safety Day, March 27, 2009 (photo: US Army).

The stress on the force is not just from the duration of deployment, but from the problems of those coming back from deployment such as the need to move the Family, economic hardships and relationships. Increased suicides and high rates of motor vehicle accidents among recently deployed personnel demonstrate the problem, which the Army is addressing by reducing the boots on the ground (time deployed) ratio to the dwell time at the home station and increasing support to its Soldiers and their Families.

This plan also marks important reforms to coordinate the various health programs for Soldiers, Families and Civilians. MEDCOM has 48 percent more behavioral health (BH) providers than in 2007, and the number of BH patient encounters increased 227 percent between 2003 and 2009. TRICARE added 2,800 BH providers to its network, increasing options for Family members.

Soldier Accidental Fatalities and Army Civilian Lost Time Due to Injuries

Occupational safety statistics are reported in GRI indicator LA7 (rates of injury, diseases, lost days, absenteeism and fatalities). The Army has a *Safety and Occupational Health Strategic Plan*, committing it to increase operational and workplace safety and health. This applies to Soldiers and Army Civilians performing non-combat industrial and garrison activities.

In August 2009, the Army released a memorandum on the Army Safety and Occupational Health Objectives for FY10,[30] which noted the decrease in accidents. In FY09, the rate of fatalities from military accidents decreased 17.2 percent, from 0.29 to 0.24 fatalities per 1,000 service members. This rate has continually decreased since FY04, the starting point for ASR trend reporting. Army Civilian lost time and fatality claims decreased 12.6 percent from 7.06 per 1,000 Civilians in FY08 to 6.17 in FY09. This is the lowest claim number since FY04 (see Table 1).

Despite decreases in military accident fatality rates, off-duty accidents continue to be one of the Army's biggest safety challenges, primarily involving young Soldiers in vehicle and motorcycle accidents (Figure 6). Future safety and occupational health objectives include targeting programs for young Soldiers and ensuring sufficient driver training programs.

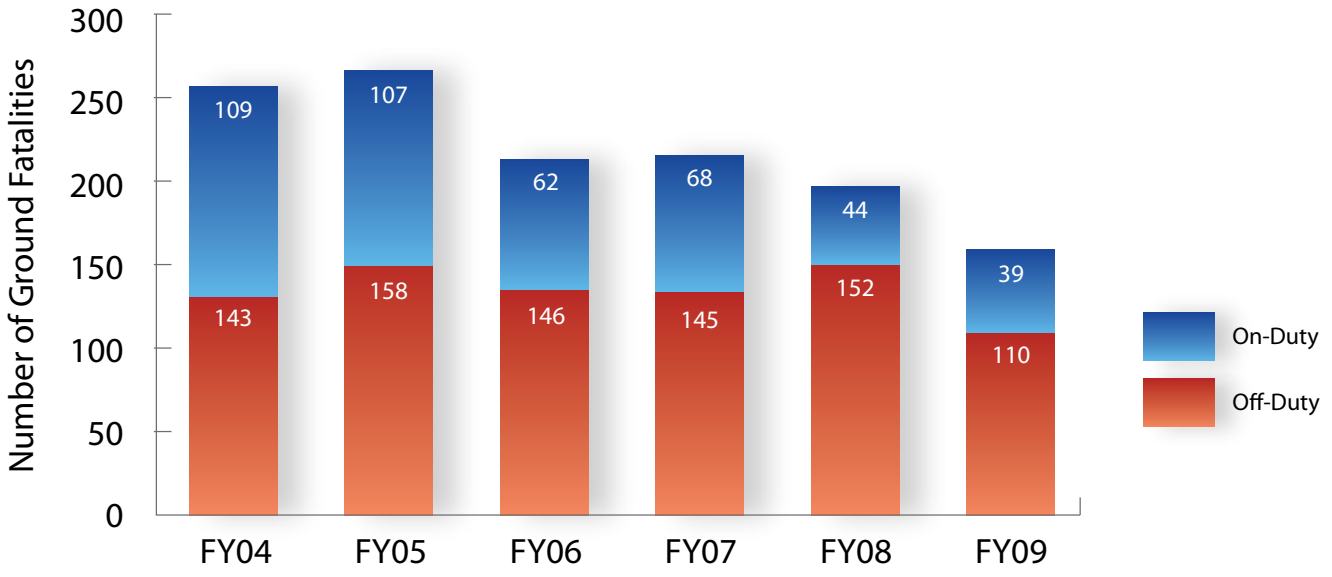


Figure 6. Army Ground Fatalities, On-Duty and Off-Duty, FY04–09

Situational Awareness of Potential Health Impacts during Deployment

Army commanders must execute the full spectrum of military operations while minimizing the total risk to deployed Soldiers and Civilian employees, often requiring a careful balance of mission, associated mission risks and other occupational and environmental health (OEH) risks that may be prevalent in the area of operations (AO).

Disease and non-battle injuries can be a greater threat to Soldiers than combat casualties. To counter the health threat, commanders institute comprehensive medical and OEH surveillance activities, preventive medicine measures (such as immunizations, pretreatments and chemoprophylaxis) and field hygiene and sanitation, combined with personal protective measures (such as wearing the correct uniform and using insect repellent, sunscreen and insect netting) and continuous command emphasis.

To maximize effectiveness, deployed units work with cooperating local agencies to vigilantly monitor the various risks to the health and well-being of all personnel and then vigorously institute policies and procedures to counter them. These risks include

- occupational and environmental health hazards, such as toxic industrial material and noise;
- insufficient acclimation to the AO and inadequate clothing and equipment for the environmental conditions;
- endemic and epidemic diseases in the AO, including diarrheal diseases caused by drinking contaminated water, eating contaminated foods, and not practicing good personal and unit sanitation and hygiene measures;
- disease transmission by arthropod vectors; and
- diseases and injuries caused by contact with poisonous or toxic plants and domesticated or wild animals (flora and fauna).[31]

More information on disease prevention policies are listed under GRI labor (LA) indicators LA8–LA9 (programs regarding serious diseases and health and safety in formal agreements with unions).

Army Civil Authorities and Disaster Relief Support

In addition to its combat and training missions, the Army supports civil authorities in disasters as governed by Title 10 U.S.C. Chapter 18 and defined in the *National Response Framework*.[32] In 2009, the Army responded to floods in the Pacific Northwest and Midwest, Hurricane Bill, Tropical Storm Danny and the tsunami in American Samoa. Active and reserve Army units are trained and prepared to react to domestic crises as consequence management and response forces.[33] In addition to disaster relief response, the Army supported civil authority events such as the Presidential inauguration.

Net Cost of Operations and End Strength

The Army is dedicated to supporting Soldiers, Families and Civilians; preparing Soldiers for the mission; resetting units to restore readiness; and transforming the Army for the future—while being as cost-effective as possible for the American public. In 2009, the Army continued to increase efficiency through business transformation. In FY09, it launched the General Fund Enterprise Business System, which integrates budget, real property, cost and nonfinancial data for a better portrayal of costs and impacts.[34]

Army end strength increased in FY09 by 1.7 percent for the active Army and 1.1 percent for the USAR and ARNG, exceeding the FY09 goal (Figure 7). In FY09, the Army began the Secretary of Defense's temporary end-strength increase authorization of up to 22,000 Soldiers. Growth allows the Army to relieve stress on the force and increase time between deployments. In 2009, the Army was able to return to 12-month deployments—improving the boots-on-the-ground (BOG) time compared with dwell time at home station (Dwell), or BOG:Dwell, to 1:1.5 from 1:0.8 in FY08. The Army's goal is to return to 1:2 BOG:Dwell by FY11.[35] In 2009, the Army also began to phase out stop-loss, which is the involuntary extension of a service member's active duty service under the enlistment contract to retain that member beyond the initial end of term of service date and up to the contractually agreed-upon end of obligated service.

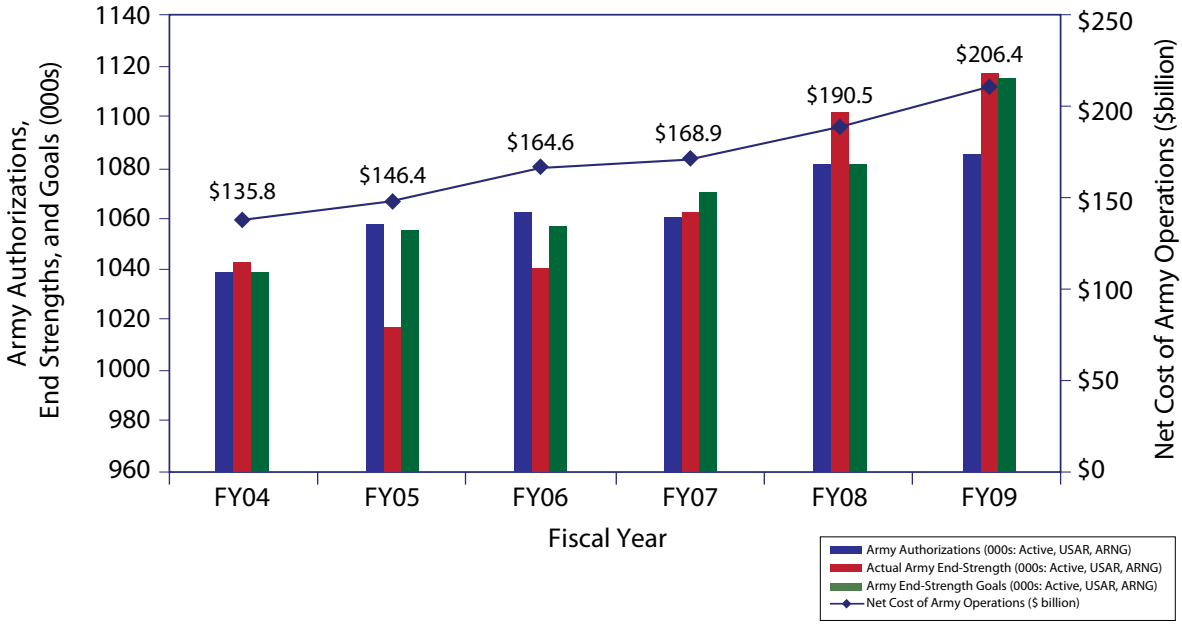


Figure 7. Army Military End Strength (Active, USAR and ARNG) and Net Operating Costs, FY04–09

As shown in Table 1 (page 17) and Figure 7, the net cost of operations increased 8.3 percent between FY08 and FY09. This has been an upward trend since FY04, partially due to the challenges of the ongoing counterinsurgency operations in Iraq and Afghanistan and the continual repair and replacement (resetting) of old equipment and systems degraded by deployment in harsh desert and mountain environments.

The number of Army Civilians decreased almost 6 percent from FY08 to FY09, but has been increasing from FY04 (Figure 8). This increase is tied to overseas contingency operations, military-to-civilian conversions, military technician increases, Defense health program increases and in-sourcing.[36]

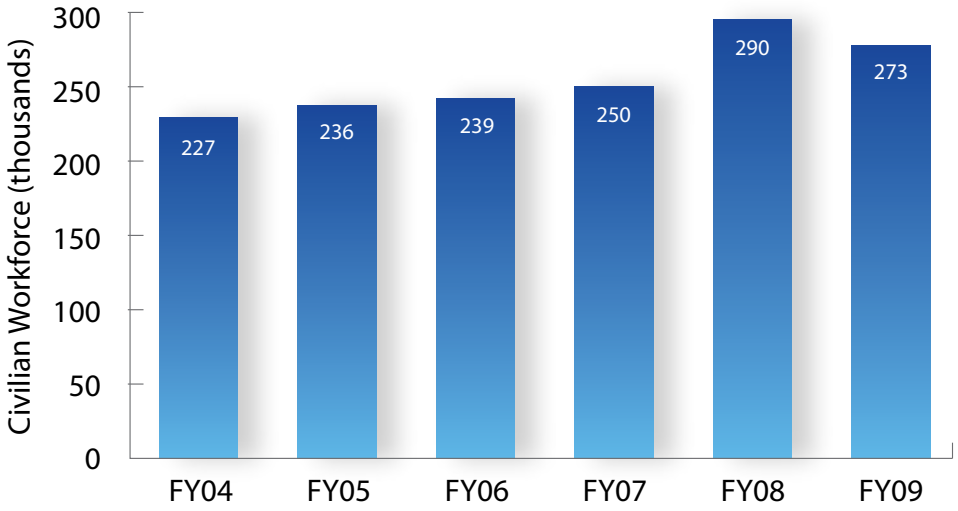


Figure 8. Army Civilian Workforce, FY04–09

Services and Infrastructure

Services and infrastructure represent the infrastructure (such as buildings, roads and utilities) and related support services essential to the operation of the Army. The Army's installations are the platforms from which it mobilizes and deploys military power, while sustaining military Families. Installations also play a vital role in training the force and reconstituting it upon return from deployment. Tens of thousands of people work and live on installations, exacting huge demands on energy and water resources and greatly impacting the environment—land, water and air. Although the Army has made great progress in adopting sustainable practices at many of its installations, it must continue to improve resourcing and incentivizing approaches that reduce energy, water and other resource consumption; better protect the environment; and improve the quality of life.[37]

The Army's physical environment consists of 13.5 million acres of land in the United States and more than 170,000 acres overseas. On 163 installations, it has more than 900 million square feet of buildings.[38] The Army's activities impact air and water quality and require environmental management of natural and manmade resources and sensitive species. Proactive environmental compliance with federal, state and local laws ensures that the Army manages its activities in a way that prevents noncompliance from constraining its ability to accomplish the mission. To be sustainable, the Army must address reducing its demand on limited natural resources, such as energy and water, and the financial resources that support its operations. Table 5 shows some sustainability requirements associated with services and infrastructure that were in development in 2009. Reporting for these requirements will be expanded in 2010.

Table 5. Looking Forward—Services and Infrastructure-Related Sustainability Requirements

EO 13514	DoD SSPP	ASCP
· Establish GHG emission reduction targets · Report GHG emission inventories · Reduce petroleum consumption · Increase renewable energy and renewable energy generation on agency property · Ensure existing buildings and leases meet the guiding principles with continued progress · Reduce building energy intensity · Ensure new buildings are designed to achieve zero-net-energy standards · Manage existing buildings to reduce energy, water and materials consumption · Reduce potable water consumption intensity and industrial, landscaping and agricultural water consumption · Implement and achieve objectives in EPA's stormwater management guidance	· Reduce GHG emissions · Produce or procure energy from renewable sources · Reduce energy intensity of facilities · Conform to the guiding principles on high performance and sustainable buildings · Reduce consumption of potable water, industrial water and irrigation water · Maintain pre-development hydrology of projects · Divert non-hazardous solid waste and construction debris from waste stream · Recover landfill gas	· Complete GHG assessments and achieve reduction goals · Implement the AESIS · Develop guidance and conduct installation and facility-level vulnerability and risk assessments to analyze global climate change · Provide guidance on sustainability for new construction and major renovations · Achieve the water conservation and stormwater management goals of EO 13423 and 13514 · Implement the Army cleanup strategy, including green remediation when cost effective · Incorporate sustainability into installation strategic plans and other plans

Note: The requirements in the table above have been summarized. Consult the three relevant source documents identified in the table above for exact language.

Table 5. (Continued)

EO 13514	DoD SSPP	ASCP
· Implement water reuse strategies · Divert non-hazardous solid waste, construction and demolition materials and debris · Implement source reduction to reduce waste and pollutants · Employ environmentally sound practices for the disposition of all agency excess or surplus electronic products · Reduce paper use · Participate in transportation planning and recognize existing infrastructure in regions and communities · Continue implementation of EMS programs	· Properly dispose of excess or surplus electronic products · Reduce use of printing paper · Coordinate with regional and local planning for transportation and energy optimization · Prepare and update integrated pest management plans · Effectively Implement and maintain EMSs	· Incorporate sustainability into services and infrastructure contracts · Develop programming for adaptation and mitigation · Develop goals, objectives and metrics

Note: The requirements in the table above have been summarized. Consult the three relevant source documents identified in the table above for exact language.

The following subsections describe FY09 Army progress related to services and infrastructure and address energy-related issues in the context of renewable energy, energy efficiency and energy security. Other topics represent the broad spectrum of activities ranging from sustainable building to environmental management systems. Overviews of performance related to funding, enforcement actions (ENFs), solid waste disposal, recycling and other indicators also are included.

Army Renewable Energy

In FY09, the Army had 67 active renewable energy projects operating and implemented 12 new projects (Table 6).

Table 6. New Army FY09 Renewable Energy Projects

Location	Project	Capacity
Arizona Army National Guard	PV panels on Combined Service Maintenance Shop	30 kW
Arizona Army National Guard	PV Array on Regional Training Institute	12 kW
Hawaii Army National Guard	Solar Streetlight	<1 kW
New Jersey Army National Guard	PV Carport	250 kW
Fort Huachuca, AZ	PV Truck Shelter	36 kW
Fort Huachuca, AZ	PV Warehouse Roof	30 kW
Fort Huachuca, AZ	PV Military Intelligence Library	30 kW
Fort Knox, KY	PV Building 1730	100 kW
Camp Humphreys, Korea	Solar Thermal Electric	300 kW
Yuma Proving Ground, AZ	PV Trackers (3 projects)	236 kW

The Army obtains a substantial amount of energy from hydropower at Rock Island Arsenal, IL, a PV array at Kwajalein Atoll and other sources. The Army purchased 148,000 megawatt hours (MWh) of electricity applicable to the renewable energy goal in FY09, including energy from a 2.0 megawatt (MW) PV array initiated at Fort Carson, CO in FY08. Also, renewable energy certificates were purchased by Fort Lewis, WA, Fort Carson, CO, and the Pennsylvania Army National Guard. The majority of the 148,000 MWh came from these renewable energy certificates.[39]

The Army reported 2.1 percent of its electricity use as renewable in FY09.

EPAct 05 §203 set targets as

(a) Of the total amount of electric energy the Federal Government consumes during any fiscal year, the following amounts shall be renewable energy: (1) Not less than 3 percent in fiscal years 2007 through 2009. (2) Not less than 5 percent in fiscal years 2010 through 2012. (3) Not less than 7.5 percent in fiscal year 2013 and each fiscal year thereafter.

Looking Forward – EO 13514: Renewable Energy

§2(a) In establishing the [GHG] target, the agency head shall consider reductions associated with: (ii)increasing agency use of renewable energy and implementing renewable energy generation projects on agency property.

Army Facility Water and Energy Efficiency

Army facilities used 58.2 billion gallons of water in FY09. Some of the increase from FY08 to FY09 is attributable to an FY09 initiative to fully capture water consumption. In FY09, the Army increased water metering and installed water-efficient fixtures. Some installations conducted aggressive leak detection surveys, saving up to 20 percent at one location. Tooele Army Depot was recognized with a 2009 Federal Energy and Water Management Award for its FY08 leak detection effort. This project saved 12 million gallons in only 6 months. Tooele Army Depot was also one of 10 awardees of the 2009 Army Energy and Water Management Awards (including small groups, installations and individuals), which together reduced water use by 64 million gallons.[40] GRI indicators EN8–EN10 direct disclosure of water consumption (see Table 11).[41]

Looking to the future, the Army is evaluating threats and changes to its water supply needed to support Army installations and training activities. In 2009, the US Army Engineer Research and Development Center, Construction Engineering Research Laboratory (ERDC/CERL) published an innovative evaluation of vulnerability to water scarcity, the *Army Installations Water Sustainability Assessment*.[42] This paper developed sustainability criteria for a water supply—including quantity and quality concerns—and projected geographic areas prone to water scarcity.

The Army reported a 1 percent increase in water consumption since FY07.

Looking Forward – EO 13514: Water

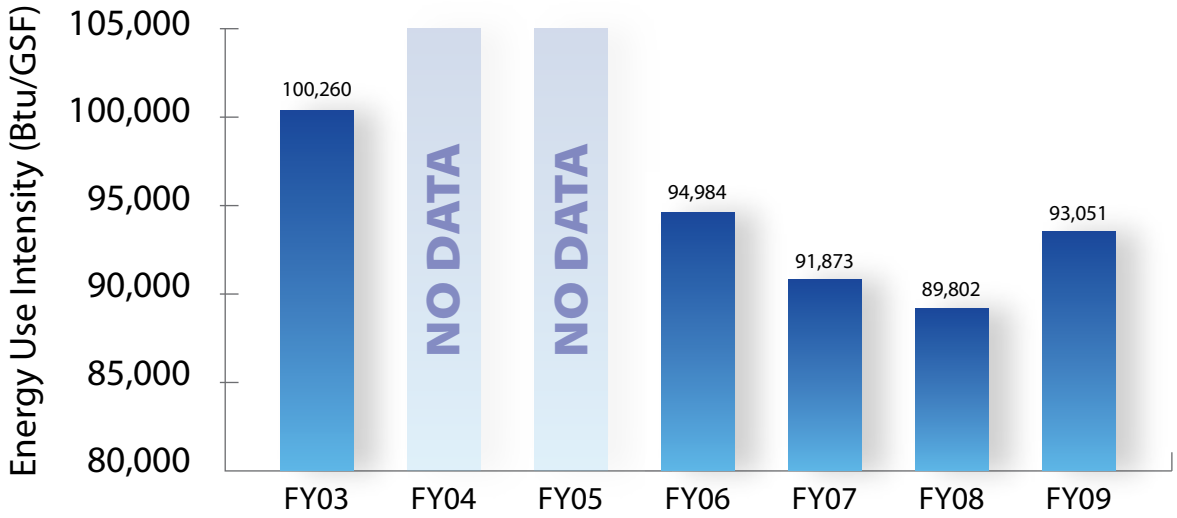
§2(d)(i): Improve water use efficiency and management by: (i) reducing potable water consumption intensity by 2 percent annually through fiscal year 2020, or 26 percent by the end of fiscal year 2020, relative to a baseline of the agency's water consumption in fiscal year 2007.

The Army's facilities performed with an energy intensity of 93,051 Btu/gsf in FY09, an increase of 3.6 percent from FY08 (Figure 9), resulting in a 7.2% decrease since FY03. The Army has lost ground on the 12 percent reduction goal set by the Energy Policy Act (EPAct) of 2005, EO 13423 and the Energy Independence and Security Act (EISA) of 2007 due to increased training, mobilization, deployment and troop strength. This increased activity and movement required energy-inefficient temporary facilities and dual-use buildings. The trend since FY04 has been uneven. The Army is pushing forward initiatives in the AESIS to meet EO 13514 goals to reduce consumption of energy (see "Army Renewable Energy" and "Sustainable Design and Development").[43]

The Army reported a 7.2 percent decrease since FY03.

Looking Forward – EO 13514: Energy

§2(a): In establishing the target, the agency head shall consider reductions associated with: (i) reducing energy intensity in agency buildings; EO 13423 included the requirement from EISA 07 § 431 to: §2(a) improve energy efficiency and reduce greenhouse gas emissions of the agency, through reduction of energy intensity by 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline of the agency's energy use in fiscal year 2003.



Note: Service-specific energy data is not included in the public FY04-06 DoD Annual Energy Management Reports.
Source: FY07-FY10 *DoD Annual Energy Management Reports.*

Figure 9. Army Facility Energy Use Intensity, FY03–09

The Army's Energy Conservation Investment Program (ECIP), along with its energy management program, uses life-cycle cost analysis to minimize impacts while reducing total ownership costs. In FY09, the Army obtained $365 million in American Recovery and Reinvestment Act (ARRA)[44] funding to implement energy-efficiency projects and $30 million for ECIP MILCON. Table 7 lists all FY09 ECIP projects, including those funded through ARRA. The results of these energy savings will be reflected in future years. GRI indicators EN3 to EN7 direct users to disclose water consumption and improvements (see Table 11).

Energy intensity is the total energy consumption of the Army per gross square foot.

Table 7. FY09 ECIP Projects

Location	Project
Aberdeen Proving Ground, MD	Install solar tubes and controls*
Blue Grass Army Depot, KY	Energy efficiency improvements, multiple locations
Fort Bliss, TX	Solar day lighting*
Fort Bragg, NC	Chilled water storage system
Fort Bragg, NC	EMCS
Fort Bragg, NC	Solar walls and solar day lighting*
Fort Buchanan, PR	Solar water heaters and HVAC replacement*
Fort Campbell, KY	Replace A/C with GSHP, efficient boilers*
Fort Dix, NJ	PV roof system, 500 kW*
Fort Drum, NY	Install solar walls, energy improvements*
Fort Drum, NY	Solar walls and rehab shops*
Fort Hood, TX	Install 8,000 motion sensors
Fort Knox, KY	Barracks geothermal phase 4*
Fort Knox, KY	Barracks ground source heat pumps, phase 5*
Fort Knox, KY	Barracks ground source heat pumps, phase 6*
Fort Knox, KY	Geothermal domestic hot water and exit lights*
Fort Lee, VA	ECIP—high efficiency lighting (phase III)
Fort Lee, VA	EMCS upgrade, phase 2
Fort Sill, OK	Geothermal heating and cooling*
Fort Sill, OK	Solar water preheater*
Fort Wainwright, AK	Wind turbine and PV panels*
Hawthorne Army Depot, NV	Geothermal test wells, phase 2*
Iowa Army Ammunition Plant, IA	GSHP and PV for buildings 100 and 101*
Pohakuloa Training Area, HI	Solar hot water and day lighting*
Presidio of Monterey, CA	378 kW PV solar system*
Schofield Barracks, HI	Solar water heaters and lighting retrofit*
Tooele Army Depot, UT	Solar walls on 14 buildings*
US Army Garrison Benelux, Belgium	Install solar water heating*
US Army Research Lab, Adelphi, MD	Install solar thermal roof tile heating system*
White Sands Missile, NM	Install direct digital controls
Yuma Proving Ground, AZ	Install motion sensors in 200 buildings

Note: EMCS = energy management control system; GSHP = ground-source heat pump.

* Renewable energy project

Energy Security

In 2008, the Army established an Energy and Partnerships office to enhance energy security—driven by surety, survivability, supply, sufficiency and sustainability. For the Army, energy security is an operational imperative that focuses on preventing loss of access to power and fuel sources. This ensures resilience by assessing alternative and renewable supplies, supporting crucial missions and the Army's community and environment. Army mission accomplishment must not be impeded by interruptions in the electrical grid in the United States. At FOBs, the price of fuel is not only paid in dollars, but in casualties and mission resources.

Since 2008, the Army has moved forward with the AESIS, finalized in 2009. Army Directive 2008-04 was issued, which directed all new Army acquisition programs to include the fully burdened cost of energy (FBCE) in the ownership cost analysis.[45] The FBCE accounts for the cost of the commodity, personnel, equipment, transportation and security to supply fuel to forces. For contingency operations, this can add an estimated $5 to $60 per gallon.

What is the Total Cost of Energy to the Army?

The commodity price for fuel plus the total cost of all personnel and assets required to move and, when necessary, protect the fuel from the point at which the fuel is received from the commercial supplier to the point of use.

–2009 National Defense Authorization Act, § 332(g)

Innovative energy developments across the Army include the following:

- Improving energy security through the use of renewable sources on installations and the battlefield (Table 6 lists Army FY09 renewable energy projects)
- Selecting a developer for the power purchase agreement and enhanced use lease of Army land for the Fort Irwin, CA, 500 MW Solar Thermal Electric Project, which will provide secure electricity and insulate this unique Army training installation from mission delay caused by commercial electric grid collapse
- Seeking partnerships for the Hawthorne Army Depot, NV, 30 MW Geothermal Electric Power Generation Project
- Requesting an additional 800 low-speed electric vehicles as part of a total of 4,000 electric vehicles over the next 3 years.

A September 2009 ribbon cutting at the 99th RSC headquarters marks the installation of solar panels at Fort Dix, NJ (photo: US Army).

Sustainable Design and Development (SDD)

The SDD policy for the Army, established in 2000 and 2001, mandated the use of the Sustainable Project Rating Tool (SPiRiT). In January 2006, the Army issued a memorandum directing the transition from SPiRiT to the US Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system effective with the FY08 MILCON program. SDD is an integrated approach to planning, designing, building, operating and maintaining Army facilities in a collaborative and holistic manner involving all stakeholders. It uses "cradle-to-cradle" thinking, looking to "harvest" materials from deconstructed facilities and reuse them instead of dumping them in a landfill.

The SDD policy does the following:

- Meets the needs of the present without compromising the quality of life of future generations
- Maintains economic growth while producing an absolute minimum of pollution, repairing environmental damages of the past, producing less waste and extending opportunities to life in a pleasant and healthy environment
- Meets human needs by maintaining a balance between development, social equality, ecology and economics
- Demands systematic consideration of environmental impact, energy use, natural resources, economy and quality of life
- Has optimal benefit only when addressed at the inception of a project and throughout its life cycle—from concept to planning; through programming, design and construction; and to ownership.

In FY09, the Army designed and constructed approximately 360 new buildings. Of those, 31 projects were already recorded as meeting the Silver certification level for LEED, 32 had pending certifications, and 229 had incomplete evaluations. Two buildings were exempted with technical or funding constraints and approximately 67 were not applicable under the SDD policy.[46]

Fairfax Neighborhood Center's energy-saving features include a geothermal heat pump system, photovoltaic solar panels, efficient lighting controls and spray foam insulation, resulting in a 70 percent reduction in energy as well as a 43 percent water savings over traditional buildings of its kind.[47]

Fairfax Neighborhood Center, Fort Belvoir, VA.

Fort Belvoir Earns the Military's First LEED Platinum Certification

In 2009, the Fairfax Village Neighborhood Center at Fort Belvoir, VA, earned the first LEED Platinum certification in the military and the second in Virginia. The Fairfax Village Neighborhood Center is the product of a public-private partnership between Fort Belvoir Residential Communities, LLC (FBRC), and the Department of the Army to develop, rehabilitate and construct 2,070 homes on 576 acres of Fort Belvoir while maintaining the design and function of other recently constructed centers. The FBRC chose to develop a "green" neighborhood to provide environmental, health and social benefits to the residents and employees who use the facility. FBRC wanted to set the standard going forward for green buildings on military installations and prove that it was possible to build a sustainable building that blended with its surroundings.

The average American residence consumes 920 kWh of energy per month.

—Energy Information Administration, Table 5. Average Monthly Bill

New MILCON Projects Designed 30 Percent More Energy Efficient

In 2009, the Army required 100 percent of new construction to be designed 30 percent more energy-efficient than the American National Standards Institute, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and Illuminating Engineering Society of North America 90.1-2004 Standard. This meets the HPSB GPs under EO 13423 and reinforced by EO 13514. The Army continues to validate this performance.

1st Brigade Combat Team headquarters, Fort Carson, CO (photo: Susan C. Galentine).

USACE Helps Fort Carson Earn LEED Gold

At Fort Carson, CO, USACE managed the construction of a new structure, the 1st Brigade Combat Team headquarters, the first building in the US Army to be awarded the US Green Building Council's Gold Certificate for LEED. The design uses native plants, natural daylight, and an interior court yard, as well as reflective, energy-efficient, blast-resistant windows, to achieve a sustainable building.[50]

Per EO 13423, all federal agencies are required to incorporate the high performance sustainable building guiding principles (HPSB GPs)—set forth in the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (2006)—into all new construction or major renovation of federal buildings.[48] EO 13514 also requires at least 15 percent of each agency's existing facilities and building leases (of more than 5,000 gross square feet) to meet the GPs by the end of FY15, with annual progress.

EO 13514 expanded upon EO 13423 by directing agencies to identify opportunities to optimize the performance of the agency's real-property portfolio; promote long-term viability of historic buildings; pursue cost-effective, innovative strategies such as reflective or vegetated roofs; and beginning in 2020, ensure that all new federal buildings are designed to achieve zero-net-energy by 2030. The Whole Building Design Guide, a project of the National Institute of Building Sciences, maintains information on policy and technical guidance for both EOs.[49]

The HPSB GPs complement the Army's April 2007 policy memorandum, "Sustainable Design and Development Policy Update," which requires all new military buildings to be built to achieve a LEED New Construction Silver certification level. The LEED requirement, bolstered by a baseline performance on HPSB, expands the criteria of sustainability beyond the GPs.

Table 8 lists the Army's LEED projects certified by the Green Building Certification Institute in 2009.[51]

Table 8. Army FY09 LEED Projects and Certification Level Awarded

Building name	Location	State	Version	Rating
Armed Forces Reserve Center	Johnston	IA	NC v2.1	Silver
Readiness Center	Concord	NH	NC v2.1	Certified
Buckley Army Aviation Support Facility	Aurora	CO	NC v2.2	Silver
US Army Reserve Center	Gainesville	FL	NC v2.2	Silver
Whole Barracks Renewal	Fort Lewis	WA	NC v2.1	Silver
Fort Carson Brigade and Battalion HQ	Fort Carson	CO	NC v2.2	Gold
Company Operations Facilities	Fort Carson	CO	NC v2.2	Silver
Div. Headquarters Complex	Fort Carson	CO	NC v2.2	Silver
Fairfax Village Neighborhood Center	Fort Belvoir	VA	NC v2.2	Platinum
Joint Force Headquarters	Pineville	LA	NC v2.2	Certified
Schofield Barracks (x4)	Wahiawa	HI	Homes	Gold
Fort Hood Housing (x10)	Fort Hood	TX	Homes	Silver
Fort Hood Housing (x16)	Fort Hood	TX	Homes	Silver
Knoxville Housing (x7)	Knoxville	TN	Homes	Gold

Benefits of Commissioning

Five years ago, MEDCOM started a continuous commissioning program for existing buildings. Commissioning ensures quality building operation by achieving, verifying and documenting system performance. Benefits accrue from improved energy efficiency, improved indoor air quality and reduced risk of downtime compared with a reactive approach to building management.

Due to these initiatives, the Walter Reed Army Institute of Research eliminated noise complaints from the surrounding community by reducing induction noise. MEDCOM has improved the patient care environment, realized a $17 million cost savings from a $14 million total investment in the last 5 years and enhanced maintenance.

Fort Belvoir's Installation Commander COL Jerry L. Blixt watches children pour water into a solar bird bath in the Fairfax Village Neighborhood Center's native plant and butterfly garden. The center is the first LEED platinum military project (photo: US Army).

Tobyhanna Army Depot Realizes Green Roof Energy and Water Reductions

Vegetated roofs are not a requirement but are cited in EO 13514 section 2(g)(iv) as one type of cost-effective strategy. Tobyhanna Army Depot is an example for the rest of the Army that vegetated roofs can be cost-effective. In 2006, the depot installed a 12,000-square-foot vegetated roof on Building 11—believed to be the first in DoD. This project has realized a 25 percent reduction in energy, a 10 percent reduction in storm water runoff and improved storm water quality.

Tobyhanna expanded the vegetated roof on Building 11 to three more wings. In 2009, it planted 61,000 square feet of the Tactical End Item Repair Facility and covered the last 25,000 square feet with a reflective white coating. This brings the total vegetated roof at the depot to more than 110,000 square feet.

The Building 11 green roof lowers the roof temperature by more than 60°F on hot summer days compared with a black rubber roof membrane.[52] An added benefit of this temperature reduction—beyond energy benefits—is the increased durability of the roof itself.

The Army's SDD policy established LEED-Silver as the standard for new construction.

Looking Forward – EO 13514: Sustainable Buildings

§2(g) Implement high performance sustainable Federal building design, construction, operation and management, maintenance, and deconstruction including by: (i) beginning in 2020 and thereafter, ensuring that all new Federal buildings that enter the planning process are designed to achieve zero-net-energy by 2030; (ii) ensuring that all new construction, major renovation, or repair and alteration of Federal buildings complies with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles); (iii) ensuring that at least 15 percent of the agency's existing buildings (above 5,000 gross square feet) and building leases (above 5,000 gross square feet) meet the Guiding Principles by fiscal year 2015 and that the agency makes annual progress toward 100-percent conformance with the Guiding Principles for its building inventory.

US Army Corps of Engineers (USACE) Civil Works

USACE contributes to national sustainability by serving the public beyond Army installations. Its Civil Works Program provides critical management of the Nation's water resources; protection, restoration and management of the surrounding environment; disaster response and recovery; and engineering and technical services. USACE owns and operates recreational areas in local communities: in FY09, 132 million people visited USACE-managed recreational areas.[53] This represents a decrease of 3.6 percent from FY08, but it is still 5 million visitors beyond the goal of the *FY09 US Army Annual Civil Works Financial Statement*.

The integration of innovative technologies and sustainability principles in energy security, renewable energy and sustainable buildings is being applied to meet the needs of the Army today and anticipate future challenges. The following subsections describe the Army's sustainability efforts relative to renewable energy technologies.

Integrated Strategic and Sustainability Planning (ISSP)

Sustainability requires planning for the long term—reviewing the true cost of the Army's boot print on the mission, environment and community. It also includes reducing the logistics footprint while improving operational security and putting fewer Soldiers at risk. The Army is minimizing impacts and total ownership costs through integration of sustainable practices, which also affects acquisition, procurement, operational costs, solid waste (SW) recycling and HW reduction.

Army Regulation (AR) 200-1 endorsed installations' integration of sustainability planning across all functional areas into one installation strategic plan. The ISSP process involves stakeholders from across all functional areas in planning for future sustainability issues. The ISSP results in a set of goals, objectives, targets, initiatives and actions for not only the next 5 years—but the next 25. In 2009, the ASCP identified the incorporation of sustainability into installation strategic plans as a future task. Integrated strategic planning will further institutionalize, or operationalize, sustainability as part of the Army's culture and values.

Operationalizing sustainability allows the Army to coordinate practices across its activities to meet goals, continue to comply with existing laws and address contamination. The Army continually seeks to reduce environmental violations and ENFs through the dedicated work of its staff—without affecting mission activities.

By December 2009, about 30 installations had completed the sustainability planning process, nine were in the process of doing so and two had started. Twelve installations have already integrated their sustainability planning into strategic planning.

Army Sustainability Awards

The Army and DoD have recognized installations for their environmental initiatives for many years. The Army has recognized a direct relationship between sustainability and program efficiency and effectiveness; as a result, it includes sustainability as an essential part of project planning. In 2009, DoD followed the Army's lead and established the Secretary of

American Indian tribal representatives hold at prayer at Camp Guernsey's South Training Area during a tribal consultation (photo: US Army).

Defense Environmental Sustainability awards category eligible for the 2010 SECDEF Environmental Awards submission.

The Army recognizes the achievements of their award-winning installations and individuals. Two installations earned DoD Environmental Awards: Fort Custer Training Center, Michigan ARNG, and Camp Guernsey, Wyoming ARNG. The Army fosters sustainability ethics from the grass roots to the top, as it honors not only installations, but individuals and teams, as well.

Several Army projects were recognized with 2009 Annual Secretary of the Army Environmental Awards:

- Camp Guernsey, Wyoming ARNG—Cultural Resources Management, Installation
- Fort Stewart/Hunter Army Airfield (FS/HAAF)—Environmental Quality, Non-Industrial Installation
- Mr. Robert J. Chartier, US Army Garrison Daegu, Korea—Environmental Quality, Individual
- Camp Withycombe, Oregon ARNG—Environmental Restoration, Installation
- Tanaga Island and Ogliuga Island FUDS, USACE, Alaska District—Environmental Restoration, Team
- Fort Custer Training Center, Michigan ARNG—Natural Resources Conservation, Small Installation
- Fort Bragg, Natural Resources Team—Natural Resources Conservation, Team
- G-4 E-Team, US Army Aviation and Missile Command—Environmental Excellence in Weapon Acquisition
- Letterkenny Army Depot—Sustainability, Industrial Installation.

Others, including three individuals, earned awards from the Federal Energy Management Program for reducing total ownership cost through energy and water efficiency in 2009:

- Mr. Walter Unick of Picatinny Arsenal managed an aggressive water system leak detection program, which avoided costs of $125,000.
- Toole Army Depot repaired 12 major line breaks and salvaged 5 million gallons of water, saving $70,000 annually.
- Mr. Daniel Wood of Fort Eustis implemented a system of mass notification during peak electrical demand as well as a fuel-switching program for Eustis's central heating plan—saving 1,324 MBtu of electricity and $2,800,000.
- Mr. Don Juhasz was recognized for his exceptional service in the office of the Assistant Chief of Staff for Installation Management (OACSIM). He led the Army's Energy and Water program for 18 years.

Letterkenny Army Depot Wins FY09 Secretary of the Army Environmental Award for Sustainability at an Industrial Installation

Letterkenny Army Depot in south central Pennsylvania supports Soldiers through tactical missile repair and overhaul of tactical wheeled vehicles, material-handling equipment, power generation sets, and mobile kitchen trailers.[54]

Letterkenny began the ISSP process in FY08. It successfully institutionalized sustainability planning into the regular maintenance and capital budgeting process. Letterkenny made sustainability projects the first priority for all depot infrastructure upgrades. Over the last 2 years, the depot reduced energy per labor hour by 13 percent—a savings of more than $936,000. Because of these upgrades, the average equipment efficiency has increased by more than 15 percent.

Other projects at Letterkenny include the following:

- Installing 80,000 square feet of lighting in warehouse and production spaces with high-efficiency fluorescent bulbs and occupancy sensors, saving an estimated $24,000 in electricity costs over the past 2 years
- Construction of a Leadership in Energy and Environmental Design (LEED)-certified 40,000-square-foot Army Reserve Center and 34,000-square-foot Tactical Missile building, reducing future energy use by 30 percent and avoiding $68,000 in costs annually
- Retrofitting overhead doors with high-speed doors at two high-traffic buildings to reduce heat loss from open overhead doors during winter months—reducing operating costs from labor and electricity by an estimated $19,000
- Replacing five General Services Administration vehicles with two all-electric passenger vans and three electric pickup trucks, reducing CO_2 emissions by 3.5 tons and saving $9,400 in fuel costs annually.[55]

Environmental Funding

Traditional environmental programs such as compliance, conservation, pollution prevention and cleanup that are elements of sustainability require adequate resourcing. GRI indicator EN30 directs users to disclose total expenditures.

In FY09, the Army allocated $1,142 million to environmental programs for restoration, compliance, pollution prevention and conservation (Figure 10). Restoration funding supports management, investigation, cleanup and long-term management of cleanup sites. Compliance funding supports sampling of air, water and waste; HW disposal; management of environmental permits; and other activities. Pollution prevention supports proactive solutions to address pollution and reduce future costs. Conservation funding provides for endangered species and cultural, historic and natural resources management.[56]

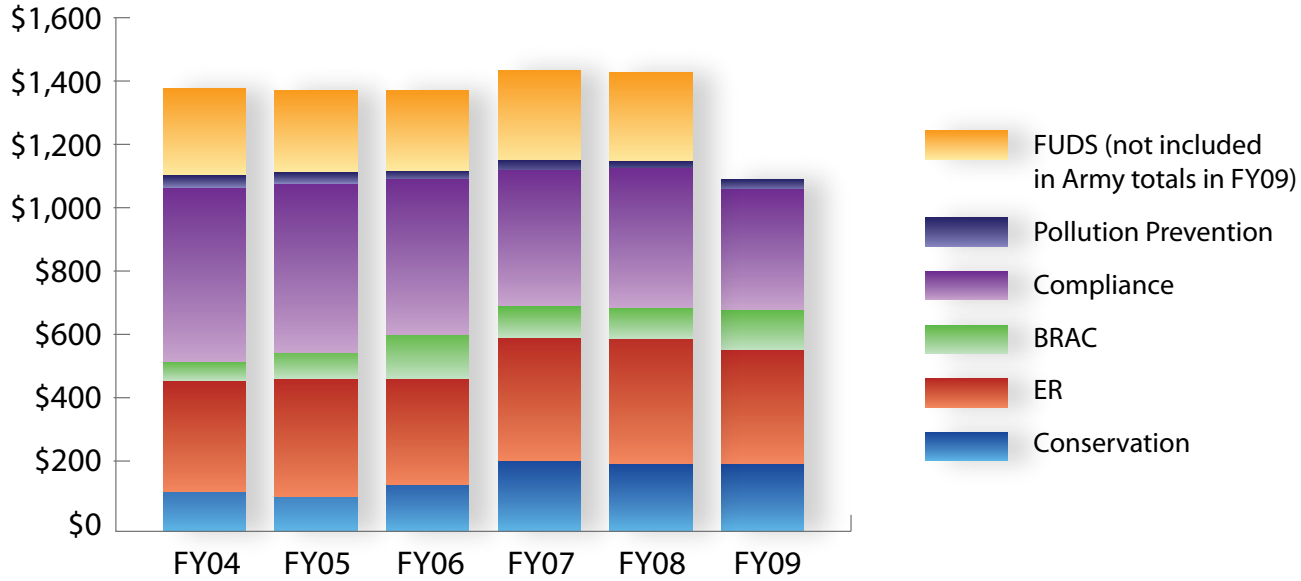
Table 1 does not show a percentage change for funding from FY08 because the source documentation (FY09 DEP ARC) removed FUDS from the Army environmental funding totals starting in FY09. Although the Army is the executive agent for FUDS, DoD provides the funding. FY04–08 totals are not comparable with those of FY09.

Environmental Enforcement Actions (ENFs)

GRI indicator EN28 recommends that users of GRI reporting metrics report the monetary value and total number of sanctions for noncompliance with environmental laws. ENFs issued to Army installations, including overseas installations, fell to 75 in FY09 (Figure 11). The majority of the reduction came from Clean Water Act ENFs, 22, less than half of FY08's 46, and Safe Drinking Water Act ENFs, 14, down from 32 in FY08. In FY09, fines and penalties increased to $552,100 from $453,200.[57]

Installations with Up-to-Date Integrated Natural Resources Management Plans (INRMPs)

Installation functions and responsibilities of testing equipment and systems, implementing procedures and training Soldiers to meet mission requirements while complying with conservation requirements are important to the Army. To create effective INRMPs, a team of stakeholders work together to find mutually beneficial solutions to avoid or minimize restrictions that divert critical natural, human and economic resources that may pose a threat to safety and the overall Army mission. In the recent past, several environmental compliance laws, regulations and EOs have resulted in requirements for energy use reduction and natural



Source: FY09 DEP ARC.
FUDS: Formerly Used Defense Sites; BRAC: Base Realignment and Closure; ER: Environmental Restoration

Figure 10. Army Environmental Funding, FY04–09

resources conservation measures on Army installations, mandating appropriate planning and conservation.

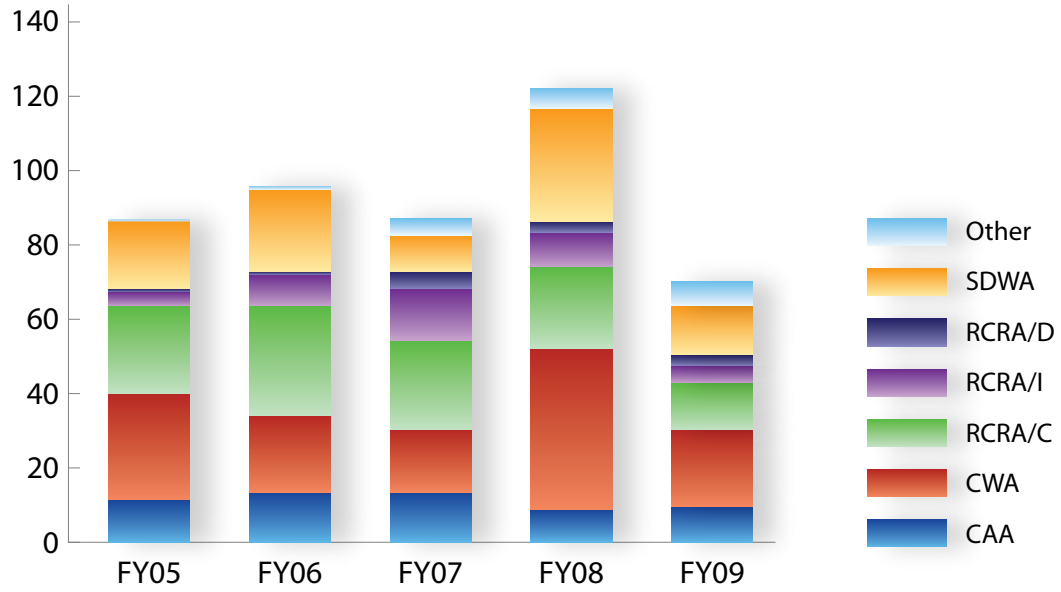
The Sikes Act, as amended, requires DoD to prepare and implement an INRMP for each installation with significant natural resources.[58] This comprehensive plan describes how natural resources will be managed to ensure the sustained use of a natural landscape. Each plan represents an agreement by the installation on the management of resources with internal stakeholders, as well as external stakeholders, including the state fish and wildlife agency and the US Fish and Wildlife Service.

To meet Sikes Act Improvement Amendments, DoD established reporting metrics to more closely evaluate INRMPs, such as performance in implementation, partnership effectiveness, impact on mission, status of species, ecosystem integrity and fish and wildlife management. The Sikes Act and tracking through DoD metrics directs the review of INRMPs for operation and effect every 5 years. INRMP reporting to the Army Secretariat, as well as to DoD for the DEP ARC, is required annually. Currently, an installation is considered to be in compliance with the Sikes Act if its INRMP has been both (1) approved in writing and (2) reviewed, within the past 5 years, as to operation and effect, by authorized officials of DoD, Department of the Interior and each appropriate state fish and wildlife agency. A current baseline list of Army installations requiring INRMPs (due to BRAC actions, Transformation, Joint Basing, etc.) is necessary to make sure the Sikes Act is effectively carried out in support of the Army's mission and reported to DoD and Congress as required. Proper planning, implementation and reporting will ensure that Army installations conserve the land for sustaining the mission while providing for the stewardship and continued access to Army lands held in trust.

Installations with Fully Implemented Environmental Management Systems (EMSs)

Sustainability requires understanding the entire system of waste, water, energy and other components. An EMS is a formal framework for sustainability that integrates environmental issues into operations and facility management to identify the environmental aspects of mission. An EMS prioritizes efforts to address significant impacts, implement solutions and track progress.[59]

The Army has adopted International Organization for Standardization standard 14001 (ISO 14001) as its EMS standard. The ISO 14001 model employs a continual cycle of policy, planning, implementation, corrective action and review.



Source: FY09 DEP ARC; does not include overseas enforcement actions by media.

Figure 11. Number of New ENFs by Statute, FY05–09, United States and Territories

EO 13514 raised the bar for EMS implementation at federal agencies by requiring external audits on a 3-year cycle. All Army installations have an EMS, and 38.2 percent have an EMS that meets the ISO 14001 standard.[60] The remaining facilities are scheduled for full implementation in FY10.[61]

Every installation has an EMS, and 38.2 percent are fully implemented.

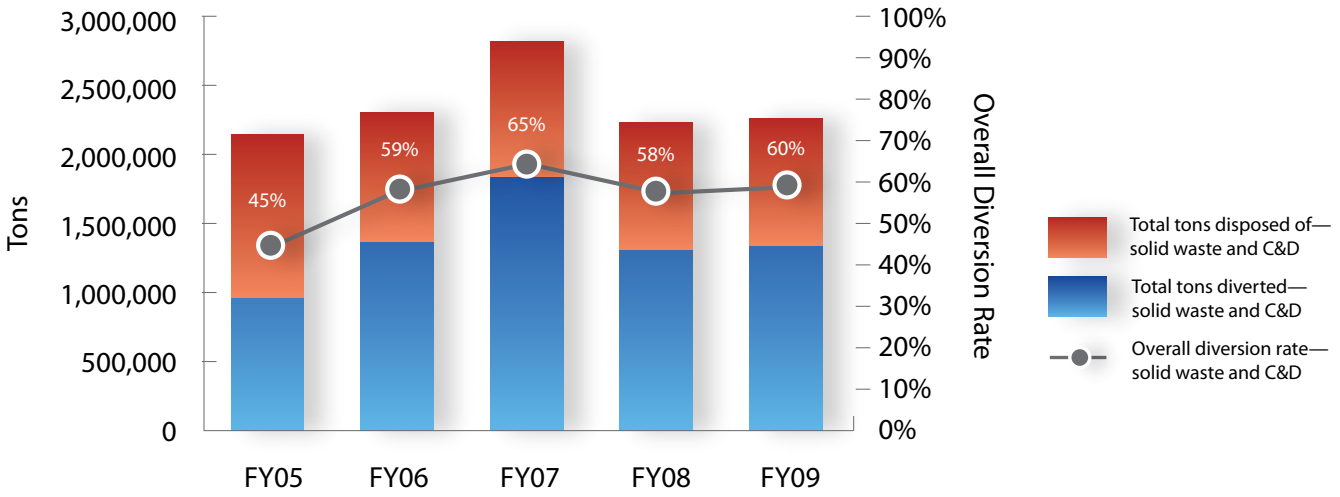
Looking Forward – EO 13514: Environmental Management Systems

§2(j): Sustain environmental management, including by: (i) continuing implementation of formal environmental management systems at all appropriate organizational levels; and (ii) ensuring these formal systems are appropriately implemented and maintained.

Solid Waste (SW) and Construction and Demolition (C&D) Debris and Recycling Rates

The Army generated 1.3 percent more SW and C&D debris in FY09 than in FY08, a total of 2.28 million tons. However, by recycling 1.36 million tons, the overall SW and C&D debris combined diversion rate for the Army increased by 2 percentage points, from 58 to 60 percent (Figure 12). Of the individual waste totals, the Army diverted 73 percent of C&D debris and 42 percent of SW to recycling. Diverting waste from landfills and incinerators resulted in a cost avoidance of $92.4 million.[62] GRI indicator EN22 directs disclosure of total waste (see Table 11).

Activities to meet the BRAC Act of 2005 and other Army Transformation initiatives increased the volume of C&D waste generation.



Source: FY09 DEP ARC

Figure 12. SW and C&D Diversion Rate, FY05–09

The Army is on track to achieve these requirements. The Army has achieved a 73 percent diversion rate for construction and demolition debris and a solid waste (SW) diversion rate of 42 percent.

Looking Forward – EO 13514: Solid Waste

§2(e)(i-iii) Promote pollution prevention and eliminate waste by: (i) minimizing the generation of waste and pollutants through source reduction; (ii) diverting at least 50 percent of non-hazardous solid waste, excluding construction and demolition debris, by the end of fiscal year2015; (iii) diverting at least 50 percent of construction and demolition materials and debris by the end of fiscal year 2015.

Fort Stewart/Hunter Army Airfield Wins FY09 Secretary of the Army Environmental Award for Environmental Quality

FS/HAAF has an award-winning waste management program. Its municipal SW diversion rate increased to 41 percent in FY09 (from 27 percent in FY07), and its C&D debris diversion rate was 91 percent. In FY09, FS/HAAF generated $868,774 in revenues and avoided $10,234,504 in cost.

FS/HAAF also established procedures to reduce HW—resulting in a 73 percent HW reduction and a 51 percent reduction in volatile organic compounds. The efforts include product substitutions, such as using water-dispersed chemical agent-resistant coating, which does not contain methyl ethyl ketone. This reduction saves $60,000 annually.

FS/HAAF's Directorate of Public Works (DPW) Environmental Division Chief, Tom Fry, receives its award from the former Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health, DASA(ESOH), Tad Davis, supported by garrison commander Colonel Kevin Milton and DPW Environmental Division staff members (photo: US Army).

DEPARTMENT OF THE ARMY
ASSISTANT SECRETARY OF THE ARMY
INSTALLATIONS, ENERGY AND ENVIRONMENT
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WASHINGTON DC 20310-0110

The Army Sustainability Report 2010 highlights our 2009 actions and accomplishments. To accelerate our progress, the Army's Senior Leadership initiated a comprehensive sustainability campaign plan to institutionalize sustainability throughout the Army's core enterprises: human capital, training/operations, materiel/acquisitions, and services/infrastructure. This enterprise-wide approach focuses on changing attitudes and instilling a sustainability ethic and personal commitment, from Soldiers and Civilians through the highest Army leadership, and valuing sustainability in our operations and acquisitions.

Historically the Army operated with relatively limited constraint on its access to resources, including low-cost energy and water. Today, however, the Army faces growing challenges to the supply of these resources both on our home installations and for our Warfighters abroad. Our Soldiers and Civilians have taken on these challenges as we strive to reach our vision of a sustainable and secure future. Much is at stake to ensure that our Soldiers - today and in the future—have the land, water, and air resources to preserve strategic choice and operational flexibility into the future.

The Army understands that addressing sustainability is operationally imperative, financially prudent, and mission essential. For us, sustainability is not a mere slogan. It must become a way of life, for the alternative is mission failure, wasted resources and Soldiers' lives at risk. Our plan is to appropriately manage our natural resources with a goal of net zero to ensure success of our primary mission of securing, protecting, and defending this Nation, while reducing costs and sustaining or increasing overall performance.

I am confident that the Army is well on its way to institutionalizing sustainability by incorporating the principles of sustainability into the very fabric of our everyday lives. We are in this for the long term and intend to succeed. Our mission in support of the Nation depends on it.

Army Strong!

Katherine Hammack
Assistant Secretary of the Army
(Installations, Energy and Environment)

Annex

This annex offers more information on the Army's organization and services using an internationally accepted reporting framework. The Army continues to improve its performance against GRI indicators, not only in evaluating those it is not reporting publicly, but providing more references for the Army's publicly available data. The first report, ASR07, published in 2008, spurred discussion throughout the Army.

GRI directs users to evaluate indicators that reflect the organization's significant economic, environmental and social impacts and influence stakeholders or those material to the organization. For the Army, material indicators affect the well-being of its stakeholders. As a public agency, the Army's stakeholders include the American public, Congress, Army Soldiers, Families and Civilians.

Please note the following limitations and changes in ASR10:

- All substance in the ASR is reported publicly in other accessible locations. The purpose of this report is to facilitate public access to this information. The Army reports additional information internally and within the federal government. Some may be material to Army sustainability, and the use of GRI has helped the Army evaluate improvements in its internal reporting practices.
- The ASR10 uses publicly available information for reporting. Although the Army has processes in place to review sustainability data, it understands the importance and need for quality data and continues to improve its data collection and reporting efforts. In addition, the Army relies on external and internal audit coverage, which can evaluate the effectiveness of programs and processes related to sustainability data, for providing assurance and continued improvements.
- The primary source documents for the ASR are as follows:
  - » *Fiscal Year 2009 United States Army Annual Financial Statement*.[63]
  - » *FY09 DEP ARC*. Every year since 1994, the Army submits its environmental performance data to DoD, which publishes them as part of the DEP ARC. This report fulfills congressional reporting requirements under Title 10 U.S.C. § 2706; the Comprehensive Environmental Response, Compensation, and Liability Act; the Resource Conservation and Recovery Act; and various other regulations.

US Army Pvt. Joseph Tapia sits with his daughter Kaylie during a presentation of gift computers by Operation Homelink on Fort Bragg, NC, August 7, 2009 (photo: US Army).

- » *2009 and 2010 Army Posture Statements*. These statements address sections 517 and 521 of NDAA 1994 and support budget and posture statements given to Congress.[64]
- » *Department of Defense Annual Energy Management Report, FY09*. DoD, like all federal agencies, is required to submit an annual energy management report to the Department of Energy (DOE). The Army annual energy data are submitted to DoD, which then submits the DoD agency report to DOE[65]. The submittals respond to current regulations, including EPAct 05, EO 13423, the John Warner NDAA of 2007, EISA 07 and EO 13514.[66]

- Performance is tracked for data from FY09 and CY09. However, some data are reported from CY08, when reporting constraints existed. In particular, HW and TRI releases from CY08 are published in the FY09 DEP ARC and are treated as data for the following fiscal year (FY09) in Table 1.
- A few performance metrics were reported differently in 2009 than in previous years due to changes in the source material.
- Each indicator may not reflect the entire boot print of the Army's activities, and the majority do not include contingency operations. These data are not publicly available or may not be relevant to the indicator.
- The size of the Army's property changes each year. In FY09, the 4th year of the 6-year BRAC program, the Army awarded 88 construction projects, adding to 150 projects awarded since FY06, 57 of which have been completed. The Army also closed four active installations and 22 USAR centers since FY06. It disposed of 1,160 excess acres.

Increasing demand for resources, such as energy, water and food, especially in developing economies, will increase competition and the likelihood of conflict. Climate change and natural disasters further strain already limited resources, increasing the potential for humanitarian crises and population migrations…

These global trends, fueled by local, regional and religious tensions, create a volatile security environment with increased potential for conflict. As these global trends contribute to an era of persistent conflict, the character of conflict in the 21st Century is changing.

–The 2009 Army Posture Statement

ASR10—Global Reporting Initiative (GRI) Content Index

Table 9 contains the index for GRI-recommended content for an organization sustainability report, and Tables 10, 11 and 12 contain the recommended GRI economic, environmental and social responsibility performance, respectively. For each GRI-recommended report content element, the table provides a reference (page number or website) to the source of the Army data.

Table 9. GRI Content Index to Army 2009 Information

GRI Indicator	Description of GRI Recommended Report Content	Reference to Army FY09 Information
1	Vision and Strategy	
1.1	Statement from the most senior decision maker of the organization	Front of this report, "Endorsement from Army Leaders."
1.2	Description of key impacts, risks, and opportunities	Pages 6–9 and 13–15 describe some of the risks to global sustainability that will affect the Army's mission success. It also discusses the evolution of Army Sustainability.
2	Organization Profile	
2.1	Name of reporting organization	United States Army.
2.2	Organization mission, functions and responsibilities	Pages 8–9
2.3	Operational structure of the organization	Pages 8–9
2.4	Location of organization's headquarters	Arlington, VA, http://pentagon.afis.osd.mil/.
2.5	Number of countries where the organization operates	More than 80 countries worldwide; see the FY09 Posture Statement Army Global Commitments for specific countries of significance for sustainability, www.army.mil/aps/09/global.html.
2.6	Nature of ownership and legal form	Page 8, the Army executes Title 10 and Title 32 U.S.C. directive, to include organizing, equipping and training forces for the conduct of prompt and sustained combat operations on lands. It accomplishes missions assigned by the President, Secretary of Defense and combatant commanders.
2.7	Markets served	Although the Army does not serve markets in the way private organizations do, it considers for the GRI its markets to be the lines of operations it supports. This includes its institutional and operational missions described in this report and its materiel, training, intelligence, medical, engineering and acquisition needs.
2.8	Scale of the reporting organization, including number of employees, net revenues and quantity of products or services provided	Page 33 includes net costs and end strength. Assets are available on page 22 of the FY09 Army Financial Report (AFR). Information on the quantity of services provided is located throughout ASR10, the FY09 Army Posture Statement (APS) and the FY09 AFR. The Annual Army Budget provides a facsimile to public or private sector organizational revenues as well as how the Army has used its budget and plans to allocate funds into the future, http://asafm.army.mil/offices/BU/BudgetMat.aspx?OfficeCode=1200.
2.9	Significant changes during the reporting period regarding size, structure or ownership including: the location of, or changes in, operations including facility openings, closings and expansions	Annex, Pages 53-54 and 61-66 describes changes to the size of the Army; additional info is also located in the FY09 AFR, page 20.
2.10	Awards received in the previous reporting period	This report only includes awards given by the headquarters, or higher levels, and recognizes that installations give awards recognizing superior performance and may receive recognition from local communities. Relevant awards include: White House Closing the Circle Awards, www.fedcenter.gov/opportunities/awards/greengovpresidentialawards/ctcwinners2009/ Commander in Chief's Annual Award for Installation Excellence, www.defense.gov/releases/release.aspx?releaseid=13443 Secretary of Defense Environmental Awards, www.defense.gov/news/newsarticle.aspx?id=54626 Secretary of the Army Energy and Water Management Awards, http://aec.army.mil/usaec/newsroom/awards00.html Secretary of the Army Environmental Awards, aec.army.mil/usaec/newsroom/awards01.html.

GRI Indicator	Description of GRI Recommended Report Content	Reference to Army FY09 Information
3	Report Profile	
3.1	Reporting period for information provided	2009
3.2	Date of most recent previous report (if any)	May 2010 (for 2008 data)
3.3	Reporting cycle (annual, biennial, etc.)	Annual
3.4	Contact point for report	Back cover of report
	Report Scope and Boundary	
3.5	Process for defining report content	Pages 64-66 list the restrictions and changes in report content. The resources in the ASR10 GRI Annex provide further access for stakeholders for topics relevant to sustainability, but not determined material for the report. Stakeholders include individual Soldiers, Families, Army Civilians, the US public and lawmakers.
3.6	Boundary of the report	This report includes Army operational and institutional programs, though performance metrics are limited as described in their source documentation. For the most part, the performance highlights metrics apply to operations within the United States, and when reported for outside the United States they do not include forward operating locations. This report does not cover activities and impacts of suppliers or privatized facilities, but does cover most leased facilities. The Army is dedicated to a one Army approach, including the Active Army, Army Reserve, National Guard and Army Corps of Engineers where possible.
3.7	State any specific limitations on the scope or boundary of the report	Pages 64-66. Some performance information is only available for certain sections of the Army, such as facility energy intensity as opposed to total energy use. This GRI Annex does not include the impact of contingency operations for 2009.
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations and other entities that can significantly affect comparability from period to period and/or between organizations	As ASR10 only reports on publicly available data, the basis of reporting for each metric is specific to the source text. This may affect reporting when methods for collecting information or data guidelines change year to year. For financial reporting, the FY09 AFR provides detail on leases and state and locally owned land used for federal purposes (pages 38-39, 52, 75). For energy reporting, the FY09 DoD Energy Management Report includes some leased facilities (page 27). For environmental reporting, the FY09 DEP ARC is mandated by Congress and its scope responds to changes in reporting requirements or changes in Army mission or structural responsibilities within the DoD.
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report	All performance metrics in this report are from other sources, which are the locations for any measurement techniques. Any divergence from the GRI indicator protocols is explained in Tables 9, 10, 11 and 12.
3.10	Explanation of the effect of any re-statements of information provided in earlier reports	Annex, Pages 53-54.
3.11	Significant changes from previous reporting periods	Annex, Pages 53-54.
3.12	Table identifying the location of the Standard Disclosures in the report	Annex, Tables 9, 10, 11 and 12.
3.13	Policy and current practice with regard to seeking external assurance for the report	The Army did not seek external assurance for this report.
4	Governance Commitments and Engagement	
4.1	Governance structure of the organization	The Army governance structure is described on pages 10–12 of this report and in U.S.C. Title 10—Armed Forces, Chapters 303–307, uscode.house.gov/download/title_10.shtml.
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	The Civilian and military leadership roles are prescribed in the U.S.C. Title 10—Armed Forces, Chapter 303—Department of the Army, uscode.house.gov/download/pls/10C303.txt.

GRI Indicator	Description of GRI Recommended Report Content	Reference to Army FY09 Information
4.3	The number of members of the highest governance body that are independent and/or non-executive members	Not applicable to the Army, GRI's Sector Supplement for Public Agencies does not have any direction for how to apply this Indicator.
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	As a public agency, the general public can provide direction for the highest governance body through action through civic participation—including elections and through engaging their representatives. For its employees, the Army has a chain of command and open door policy. This is outlined in AR 600-20, *Army Command Policy* in Sections 2-1 and 2-2, http://armypubs.army.mil/epubs/pdf/r600_20.pdf. Mailing address provided at www.Army.mil/contact/.
4.5	Linkage between compensation for members of the highest governance body, senior managers and executives and the organization's performance	Organizational performance for the Army as a public agency is linked to program execution and sustainment, not economic profits. Individuals can be considered for general pay increases, performance-based promotions and placement actions through a rating from the National Security Personnel System. Part of an individual's rating may reflect their ability to execute programs as part of the organization's performance www.cpms.osd.mil/nsps/.
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	All government employees are held to the standards in 5 Code of Federal Regulations (CFR) 2635, Standards of Ethical Conduct for Employees of the Executive Branch, http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title05/5cfr2635_main_02.tpl. DoD officials are further held to the Joint Ethics Regulation, DoD 5500.7-R Chapter 5, which covers conflict of interest, www.dod.gov/dodgc/defense_ethics/ethics_regulation/jer1-6.doc. Procurement conflicts of interest are also listed in U.S.C. Title 10—Armed Forces, Chapter 137 Procurement Generally, uscode.house.gov/download/pls/10C137.txt.
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental and social topics	Title 10 Chapter 305—The Army Staff, describes how members of the staff are selected. The Chief of Staff and Vice Chief of Staff are appointed by the President and confirmed by the Senate, according to Title 10, Chapter 305, § 3033-3034. The Secretary of the Army, Undersecretary, Assistant Secretaries and General Counsel are appointed by the President with Senatorial confirmation, according to Title 10, Chapter 303, § 3013-3019. Qualifications for Senior Leadership for the Army are outlined in *How the Army Runs: A Senior Leader Reference Handbook,* 2009-2010, www.carlisle.army.mil/usawc/dclm/htar2009.pdf.
4.8	Internally developed statements of mission or values, codes of conduct and principles relevant to economic, environmental and social performance and the status of their implementation	Pages 10–12 describe the evolution and goals of sustainability and the drivers behind the Army Sustainability Campaign Plan.
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental and social performance	In December 2009, the Secretary of the Army appointed the Under Secretary as the Army Senior Sustainability Official to oversee the implementation of EO 13514. These responsibilities are described on pages 10-12.
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental and social performance	In 2009, the Army was in the process of strengthening the methods through which the organization evaluates economic, environmental and social performance. This will be described in more detail in future reports and through further integration with the Army Sustainability Campaign Plan. The highest governance body is evaluated by its accordance to laws and EOs, described in GRI indicator PA3 (Table 9).
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization	On pages 10-12, the Army describes its dedication to acting proactively; through meeting the requirements of EO 13514 and other policies described throughout this report. The ASCP embodies this approach.

GRI Indicator	Description of GRI Recommended Report Content	Reference to Army FY09 Information
4.12	Externally developed economic, environmental and social charters, principles or other initiatives to which the organization subscribes or endorses	Numerous statutes, regulations and EOs apply to DOD activities, www.archives.gov/federal-register/executive-orders/. The Army also adheres to all DoD Directives, www.dtic.mil/whs/directives/corres/ins1.html. The Army also applies the US Green Building Council's LEED® standards for new construction, www.usgbc.org.
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization has positions in governance bodies, participates in projects or committees, provides substantive funding beyond routine membership dues or views membership as strategic	Not reported in one Army location. The Army is involved in many interagency working groups, including the Interagency Sustainability Working Group, www1.eere.energy.gov/femp/program/sustainable_workinggroup.html. The Army is also associated with the National Guard Association of the United States and the Association of the United States Army, as well as similar organizations.
4.14	List of stakeholder groups engaged by the organization	As a public agency, the Army has several classes of stakeholders outside its organization, including communities outside installations, lawmakers, other agency officials and the US public in general.
4.15	Basis for identification and selection of stakeholders with whom to engage	The Army engages with stakeholders in the communities around installations in different ways depending on the purpose. For example, the Comprehensive Environmental Response, Compensation, and Liability Act and the National Environmental Policy Act (NEPA) require the Army to solicit and consider stakeholder comments on alternatives. The Army requires Community Relation Plans for properties on the National Priority List. The AR 200-1 *Environmental Protection and Enhancement* includes guidelines for identifying stakeholders for environmental restoration plans, page 59, www.apd.army.mil/pdffiles/r200_1.pdf. The Army also has some special partnership programs, including the ACUB Program, described in this report on page 25. Additionally, the Army engages with the community in open houses or community educational events. Guidelines for these events are in AR 360-1, page 29-30, www.apd.army.mil/pdffiles/r360_1.pdf.
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	The Army gives testimony to Congress repeatedly throughout the year and has specific dates for reports. Army installations interact with their local community at variable rates throughout the organization. In 2008, the Army created the Army Community Covenant, a resource for communities and Army Soldiers and Families to identify programs outside of the installations for support, www.army.mil/community. The Army also has 4 Offices of Regional Environmental and Government Affairs (OREGAs) that coordinate region sustainability issues, review state regulation, facilitate partnerships and share best practices www.asaie.army.mil/Public/ESOH/OREGA/. The Army is required to include public comment periods for activities analyzed under NEPA.
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	The Army reports continuously to the US Congress on its activities and responds to many concerns and reporting requirements throughout each year. Reporting via the ASR and the annual posture statement is one way the Army provides information to the general public on its activities beyond reports aimed toward Congress. The Army Family Covenant represents the Army's commitment to ensuring a quality of life for Soldiers and their Families appropriate for the service they provide. Although there is still much to be done, significant progress has been made in improving such programs as Family programs, education, health care and housing. http://www.myarmyonesource.com/CommunitiesandMarketplace/ArmyFamilyCovenant/default.aspx.

GRI Indicator	Description of GRI Recommended Report Content	Reference to Army FY09 Information
	Public Policies and Performance Integration Measures	
PA1	Describe the relationship to other governments or public authorities and the position of the agency within its immediate governmental structures	Pages 10–12. The DoD organization chart describes the position of the Army within its immediate governmental structures, http://www.defense.gov/orgchart/. DoD's position within the federal government is seen in the US Government Manual Chart, frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2008_government_manual&docid=214669tx_xxx-3.pdf.
PA2	Define sustainable development used by the public agency and identify any statements or principles adopted to guide sustainable development policies	For this report the Army interprets sustainable development to refer to its infrastructure and planning activities. Specific policies include the Army's Sustainable Design and Development Policy for buildings, http://www.asaie.army.mil/Public/IE/doc/Sustainable%20Design%20and%20Dev%20Policy%20Update.pdf, and guidance designed to encourage integrated strategic and sustainability planning at the installation level. The requirements of EO 13514 also include many aspects of sustainable development across the entire organization.
PA3	Identify the aspects for which the organization has established sustainable development policies	The ASCP set broad goals for sustainability discussed in ASR10. Specific policies include the Army's Sustainable Design and Development Policy for buildings, http://www.asaie.army.mil/Public/IE/doc/Sustainable%20Design%20and%20Dev%20Policy%20Update.pdf, and guidance designed to encourage integrated strategic and sustainability planning at the installation level. The requirements of EO 13514 also include many aspects of sustainable development across the entire organization.
PA4	Identify the specific goals of the organization for each aspect listed in PA3	The Army's energy and environmental goals are well delineated within EO 13514, EO 13423, EPAct 05 and EISA 07 and are listed in Tables 2-5 with web references. DOE created a crosswalk of the goals and statutes, www.fedcenter.gov/_kd/Items/actions.cfm?action=Show&item_id=14107&destination=ShowItem. The Army has additional goals outside of its federal requirements, including for Sustainable Design and Development: Beginning with FY08, MILCON new vertical projects must achieve a minimum of the Silver level of the LEED® for New Construction.
PA5	Describe the process by which the aspects and goals in PA3 and PA4 were set	The goals in EO 13514 were signed by President Barack Obama in October 2009. The DOE crosswalk listed in PA4 also references the statute sources of some of the goals. The goals in the Army's 2007 Sustainable Design and Development Policy were signed by the Acting Deputy Assistant Secretary of the Army (Installations and Housing). The other aspects above are plans and programs established by the Army leadership due to identified needs.
PA6	For each goal, provide the following: implementation measures; results of relevant assessments of the effectiveness of measures before they are implemented; targets and key indicators used to monitor progress, with a focus on outcomes; description of progress relative to goals and targets in the reporting periods, including results of key indicators; actions to ensure continuous improvement toward reaching the public agency's goals and targets; post-implementation assessment and targets for the next time period; and public policies and implementation measures	The Army is working to improve its response to this indicator. EO 13514 expanded the goals set in EO 13423. The Army reports its progress on this implementation to OSD, for roll-up in OSD submissions on the various Office of Management and Budget scorecards, www.fedcenter.gov/admin/itemattachment.cfm?attachmentid=296. In FY09, DoD as a whole improved on Transportation and Environmental Stewardship. Some of this information is available in the DoD Energy Management Report on energy, water and building performance. This is also reported on the Army's Energy Program website, http://army-energy.hqda.pentagon.mil/. Some of these goals are also listed in the Performance Highlights section of this report with information on progress and developments in relation to the performance.
PA7	Describe the role of, and engagement with, stakeholders relative to the items disclosed in PA6	Stakeholders are generally not involved in the goals described in PA3-PA6 by the Army specifically. Stakeholders can influence sustainability goals for federal agencies through their representatives in Congress. However, each Army installation may have involved stakeholders in making plans on the local level.

ASR10—Global Reporting Initiative (GRI) Economic Indicators

The Army is different than most GRI-based sustainability reporters, because its economic performance reflects how well the Army is operating as a steward for the American public versus profit earned. The Army also has economic impacts on local communities.

The Army's financial statements are in accordance with the accounting principles established by the Federal Accounting Standards Advisory Board. The highest officials for these indicators are the Assistant Secretary of the Army for Financial Management and Comptroller.

Table 10. 2009 Army Sustainability Report Economic Indicators

GRI Indicator[67]	Description of GRI Recommended Report Content	2009 Status[68]	Link to 2009 Army Source Data
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments		The FY09 AFR presents financial records broken out into Army General Fund, Army Working Fund and the Civil Works program. Each division includes a consolidated balance sheet, a consolidated statement of changes in net position and other summaries. The Army FY10 Budget documentation includes FY09 funds enacted on Operation and Maintenance, Procurement, Research, Construction, Personnel and other obligations. The FY10 Defense Budget Report includes tables on the Army's total obligation authority, budget authority and outlay, asafm.army.mil/offices/BU/BudgetMat.aspx?OfficeCode=1200.
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change		See discussion on page 10-12; the Army is partially reporting this GRI indicator because it has not conducted an analysis of the budgetary impact of climate change on its operations—however, it has acknowledged that climate change may further stress its resources.
EC3	Coverage of the organization's defined benefit plan obligations		The Army has a website discussing Army benefits for military personnel, including planning calculators and benefits at the federal and state level, myarmybenefits.us.army.mil/. Army Civilian benefits are listed on the Defense Finance and Accounting Service website, http://www.dfas.mil/civilianemployees.html. This site also includes pay tables for military and Civilian personnel as well as benefits for retirees. The annual Army contribution to the military and other federal employment benefits is provided in the FY09 AFR, pages 25, 28, 43, 54 and 62. This includes military retirement pensions and health benefits, Voluntary Separation Incentive Programs, DoD Education Benefits Fund and the Federal Employees Compensation Act cost.
EC4	Significant financial assistance received from government		The FY09 AFR includes tables on budgetary financing sources broken out into the Army General Fund, Army Working Capital Fund and the Civil Works program.
EC5	Range of ratios of standard entry-level wage compared to local minimum wage at significant locations of operation		The Army is held to the Fair Labor Standards Act (FLSA) and takes state and local laws into account when applicable in setting pay, www.opm.gov/oca/wage/index.asp. Soldier pay is prescribed by law and its computation is listed in the DoD Financial Management Regulations, comptroller.defense.gov/fmr/07a/07a_01.pdf. Soldiers can receive changes in pay for hazardous, submarine, diving, hardship and for particular skills, including foreign language proficiency, page 1–21. The Army provides allowances to offset cost of living based on locality. A basic allowance for housing is based on local Civilian housing markets, myarmybenefits.us.army.mil/Home/Benefit_Library/Federal_Benefits_Page/Allowances.html?serv=147. Information on pay for the ARNG in comparison to federal and military pay charts, myarmybenefits.us.army.mil/Home/Benefit_Library/Federal_Benefits_Page/Basic_Pay.html?serv=150. The Office of Personnel Management (OPM) includes information on how pay differs for Army Civilians. Civilians have locality pay areas that take into account local cost of living, www.opm.gov/oca/09tables/indexGS.asp. Pay for foreign national employees located outside the United States is based in the Foreign Service Act of 1980 and can include Local Compensation Plans that take into account consistency with prevailing wage rates. Further, the rate cannot be lower than the minimum set by FLSA, www.dtic.mil/whs/directives/corres/pdf/141608m.pdf. This indictor is listed as fully reported against GRI indicator although no ratio is reported due to the detailed directives.

GRI Indicator[67]	Description of GRI Recommended Report Content	2009 Status[68]	Link to 2009 Army Source Data
EC6	Policy, practices and proportion of spending on locally based suppliers at significant locations of operation		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Where feasible and appropriate, the Army will strive to include this indicator in subsequent annual reports.
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation		The employment of senior management hired from the local community is not an Army Military personnel priority—nor is it aligned with the operational structure of the Army. However, the Army does hire from the local community in many locations for Civilian roles, www.dtic.mil/whs/directives/corres/pdf/1400.25_SC1950.pdf. DoD Instruction (DoDI) 1400.25 volume 1231 lists processes for hiring foreign nationals, www.dtic.mil/whs/directives/corres/pdf/1400.25-V1231.pdf. This hiring practice is also guided by individual treaties.
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind or pro bono engagement		The Army, as a public agency, has a mission based on providing services directly for public benefit—the nation's security as well as a vibrant Civil Works program. The Civil Works program is focused on infrastructure and supports: navigation, flood risk management, ecosystem restoration, recreation, hydropower and other needs. The Army Civil Works FY09 Financial Statement goes into detail on the size and scope of Civil Work's efforts. This makes the Army unique in comparison to other organizations using GRI. Outside of infrastructure provided for the community, the Army also conducts analysis on the community infrastructure affected by changes in Army presence, as described under indicator EC9. BRAC 2005 is scheduled to be complete at the end of 2011. The Army has resources for community relations with the military, with regional contacts http://www.army.mil/comrel/.
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts		As major regional employers, the Army is sensitive to its economic impact. DoD Directive 5410.12 "Economic Adjustment Assistance to Defense-Impacted Communities," (July 5, 2006) directs military personnel to assist local communities impacted by military activities, realignment or closure, www.dtic.mil/whs/directives/corres/pdf/541012p.pdf. The Army conducts a variety of studies to understand and describe the indirect economic impacts as part of its BRAC initiatives. The public can view the Army's recommendations, community concerns and commission findings for each BRAC location using the map at: www.hqda.Army.mil/ACSIM/brac/braco.htm. In 2009, the Army published a handbook to assist local communities with installation growth, www.hqda.army.mil/ACSIM/brac/HandbookForGrowthCommunities3.18.pdf. This handbook details the challenges in changing demand for housing, construction, schools, infrastructure and social services. It also lists lessons learned.
PA8	Gross expenditures broken down by type of payment		See data for EC1.
PA9	Gross expenditures broken down by financial classification		See data for EC1.
PA10	Capital expenditures broken down by financial classification		See data for EC1.
PA11	Procurement policy of the public agency related to sustainable development		EO 13514 directs agencies to ensure that 95 percent of all new contracts require products and services that are energy-efficient, water-efficient, bio-based, environmentally preferable, non-ozone depleting, contain recycled content and non-toxic or less-toxic alternatives. The DoD Green Procurement Strategy is available at, www.fedcenter.gov/_kd/go.cfm?destination=ShowItem&Item_ID=12371. It also lists alternative fuels and products using renewable energy.

GRI Indicator[67]	Description of GRI Recommended Report Content	2009 Status[68]	Link to 2009 Army Source Data
PA12	Describe economic, environmental and social criteria that apply to expenditures and financial commitments	■	AR 70-1, Army Acquisition Policy, directs that each program formally address questions of need, cost, risk and stability. The Army defines cost beyond the capital, to "the total cost to the Government for a program over its full life, and includes the cost of research and development, investment in mission and support equipment (hardware and software), initial inventories, training, data, facilities, and the operating, support and, where applicable, demilitarization, detoxification or long term waste storage." This policy also calls for managing risk to environment, safety and occupational health, preventing pollution and using recovered materials (1-5 (j, j, p)), www.army.mil/usapa/epubs/pdf/r70_1.pdf. Army purchasing is also driven by the Federal Acquisition Regulation (FAR), https://www.acquisition.gov/far/index.html. The FAR's guiding principles are to satisfy the customer in terms of cost, quality and timeliness, to promote competition, minimize administrative costs and fulfill public policy objectives. The FAR has priority for some businesses, including small business (Part 19), directs purchase of energy, environment and water efficient products as well as safe products (Part 23) and other socioeconomic programs (Part 26).
PA13	Describe linkages between the public agency's procurement practices and its public policy priorities	■	The DoD Green Procurement Program guidance specifically directs: "purchases of green products and services consistent with the demands of mission, efficiency and cost-effectiveness, with continual improvement toward federally established procurement goals."
PA14	Percentage of the total value of goods purchased that were registered with voluntary environmental or social labels and/or certification programs, broken down by type	□	Not reported. The Army currently does not maintain or track this information, although per PA 11, these goods are being purchased.
PA15	Administrative efficiency: describe the results of assessments of the efficiency and effectiveness of services provided by the public agency, including the actions taken to achieve improvements in service delivery	■	It is difficult to measure the service delivery efficiency of the Army. The FY09 AFR reports on the Army's operations and use of funds for the prior year. This report informs the taxpayer on how and where funds are used. The Government Accountability Office (GAO) issues many reports every year on the performance of DoD. From October 2008 to December 2009 there were 195 reports on DoD programs, www.gao.gov/docsearch/agency.php. of particular relevance for this report are its evaluations of DoD's Renewable energy use, GAO-10-104, www.gao.gov/new.items/d10104.pdf Post-deployment health reassessments, GAO-10-56, www.gao.gov/new.items/d1056.pdf Base realignments and closure costs, GAO-10-98R, www.gao.gov/new.items/d1098r.pdf Improving access to benefits for Wounded Warriors, GAO-09-762, www.gao.gov/new.items/d09762.pdf Fuel demand management at forward-deployed locations, GAO-09-388T, www.gao.gov/new.items/d09388t.pdf.

ASR10—Global Reporting Initiative (GRI) Environmental Indicators

The Army is required by Congress to report on many of the GRI environmental indicators; not all this reporting is public or on the Internet. The Army's environmental goals are driven by regulations set by Congress. Readers can learn more about these requirements by using the references provided in relevant ARs as well as legislation, including the following:

- AR 200-1, *Environmental Protection and Enhancement*, www.army.mil/usapa/epubs/pdf/r200_1.pdf, which addresses the following
  - » Pest Management (p. 27), Cultural Resources (p. 28), Pollution Prevention (p. 30), Munitions Use on Ranges (p. 31), Materials Management (p. 32), Waste Management (p. 34), Spills (p. 36), Cleanup (p. 38), Environmental Quality Technology (p. 42), Operational Noise (p. 43).
- AR 420-1, *Army Facilities Management*, which addresses management of public works, housing, utilities services and energy management
- EPAct 05, frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_bills&docid=f:h6enr.txt.pdf
- EISA 07, frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_bills&docid=f:h6enr.txt.pdf
- EO 13514. *Federal Leadership in Environmental, Energy, and Economic Performance,* October 2009, www.fedcenter.gov/programs/eo13514/.

The most senior official for environmental GRI indicators at the Army is the Assistant Secretary of the Army for Installations, Energy and Environment.

Table 11. 2009 Army Sustainability Report Environmental Indicators

GRI Indicator[69]	Description of GRI Recommended Report Content	2009 Status[70]	Link to 2009 Army Source Data
EN1	Materials used by weight or volume		Not reported. This information was not readily available at the time this report was prepared. Where feasible and appropriate, the Army will strive to include this indicator in subsequent annual reports.
EN2	Percentage of materials used that are recycled input materials		Not reported. This information was not readily available at the time this report was prepared. Where feasible and appropriate, the Army will strive to include this indicator in subsequent annual reports.
EN3	Direct energy consumption by primary energy source		This indicator is listed as partially reported in aggregate in the DoD Energy Management Report, as well as in terms of total energy consumption per square foot (93,051 Btu/gsf).
EN4	Indirect energy consumption by primary source		Not reported. EO 13514 directed that agencies begin to report on GHG emissions from indirect energy consumption (Scope 2 and eventually Scope 3) beginning with FY10 reporting in January 2011. The full scope of public reporting is undefined.
EN5	Energy saved due to conservation and efficiency improvements		DoD Energy Management Report states a reduction in energy intensity from 100,260 Btu/gsf in FY03 to 93,051 Btu/gsf in FY09, which it attributes to the Army's energy program. This indicator is listed as partially reported against GRI indicator as it does not provide a total amount of energy saved.

GRI Indicator[69]	Description of GRI Recommended Report Content	2009 Status[70]	Link to 2009 Army Source Data
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives		This indicator is partially reported according to the GRI guidelines because the Army reports on its energy efficiency and renewable energy initiatives and programs in the DoD Energy Management Report, but it does not report total energy saved from these initiatives. Some initiatives include GP policy for energy-efficient products, retrofits and capital improvement, the use of performance contracts, new construction that is required to be designed at 30 percent more energy efficient than ASHRAE Standard 90.1-2004 and new on-site renewable energy.
EN7	Initiatives to reduce indirect energy consumption and reductions achieved		Not reported. EO 13514 directed agencies to begin to report on GHG emissions from indirect energy consumption, and progress toward reductions associated with this consumption.
EN8	Total water withdrawal by source		The Army reports on total potable water use in gallons (58.2B) in the DoD Energy Management Report. This indicator is listed as partial because it does not list water withdrawals by source and it does not publicly report on non-potable water use.
EN9	Water sources significantly affected by withdrawal of water		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared.
EN10	Percentage and total volume of water recycled and reused		Not reported. Water recycling is reported by installations in the Army Energy and Water Reporting System but is not tracked by DoD or included in the Annual Energy Report.
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high bio-diversity value outside protected areas		The FY07 Threatened and Endangered Species (TES) Report (published in FY09) includes information about the location of designated critical habitat and TES on the base or off site. Critical habitat is designated as essential to the conservation of the species. This indicator is listed as partial because it does not include the size of the land, aec.army.mil/usaec/endangered/index.html.
EN12	Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas		The Army reports its impacts on and programs for endangered species and their habitat in the TES Report. DoD Biodiversity website lists resources on the impacts of activities on protected areas, http://www.denix.osd.mil/nr/OtherConservationTopicsAH/Biodiversity.cfm. The Army reports on the progress of its habitat and land resource protection programs, including the Sustainable Range program, http://www.denix.osd.mil/sri/, and the ACUB program aec.Army.mil/usaec/acub/index.html.
EN13	Habitats protected or restored		This indicator is listed as partial because the Army does not report on the gross amount of habitat protected. The TES Report cites which installations have protected habitat for endangered species. Also, the Army does report on conservation partnerships, especially the ACUB program, where enduring conservation purchases are created with local landowners and other partners. The FY09 ACUB Program Year End Summary states that in FY09 alone more than 35,000 acres of land were protected and through the lifespan of the ACUB program more than 127,000 acres of land were protected by the end of 2009, aec.army.mil/usaec/acub/docs_acub/eoys-fy09.pdf.
EN14	Strategies, current actions and future plans for managing impacts on biodiversity		Programs for biodiversity are guided by AR 200-1. For specific programs, DoD's Legacy resource management program seeks to protect the public's natural and cultural heritage, https://www.dodlegacy.org/legacy/index.aspx. This site includes links on public laws, products that include evaluations of programs and monthly newsletters.
EN15	Number of International Union for Conservation of Nature (IUCN) Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk		The annual TES Report includes all species and designated critical habitat on and contiguous to Army installations in the United States that are listed by the Endangered Species Act. The report may be used to interpret habitats that may be affected by military operations and vice versa. Many of these species are also listed by the IUCN. However, the TES Report does not designate which species are IUCN-listed species, so this indicator is listed as partial. The Overseas Environmental Baseline Guidance Document lists species that are on the red list that could impact military operations at DoD facilities overseas, www.dtic.mil/whs/directives/corres/pdf/471505g.pdf.

GRI Indicator[69]	Description of GRI Recommended Report Content	2009 Status[70]	Link to 2009 Army Source Data
EN16	Total direct and indirect GHG emissions by weight		Not reported for FY09, EO 13514 will require future reporting of this indicator for FY10.
EN17	Other relevant indirect GHG emissions by weight		Not reported for FY09, EO 13514 will require future reporting of this indicator for FY10.
EN18	Initiatives to reduce GHG emissions and reductions achieved		Not reported for FY09, EO 13514 will require future reporting of this indicator for FY10.
EN19	Emissions of ozone-depleting substances (ODSs) by weight		Since 1992, the Army has eliminated 98 percent of Class I ODSs used in facilities, including 100 percent of halon used for fire suppression and Chlorofluorocarbons (CFCs) used for air conditioning and refrigeration. It has eliminated 75 percent of Class I ODSs used in weapons system support, including 68 percent of halon used for legacy weapon systems. Lastly, the Army has eliminated 100 percent of Class I ODS solvents used for maintenance and industrial operations. All Army installations have ODS elimination plans. See the FY09 DEP ARC for more detail. This indicator is partially reported according to the GRI guidelines since the total emissions by weight are not publicly available.
EN20	NOx, SOx, and other significant air emissions by type and weight		The Army reports significant air emissions by type and weight in the FY09 DEP ARC, Appendix B. In CY08, the Army emitted HAPs (431), VOCs (3,926), NO2 (3,750), PM10 (3.061), PM2.5 (383), SO2 (5,294), CO (1,529) and Lead (12.49) [tons/year]. All emissions decreased since CY07 except Lead.
EN21	Total water discharge by quality and destination		Not reported. The Army does not provide a consolidated annual report of this information. However, Army installations under the National Pollutant Discharge Elimination System in the United States reports water quantity and quality for all point source discharges. The Army also publishes compliance with the Clean Water Act, Safe Drinking Water Act and Final Governing Standards in foreign nations in the FY09 DEP ARC, Appendix B.
EN22	Total weight of waste by type and disposal method		The Army reports the total SW generated (2,278,462 tons) and diverted (1,356,624 tons), including C&D debris, and total HW disposal (27,372 tons) in the FY09 DEP ARC. This indicator is partially reported because it does not list the specific disposal method.
EN23	Total number and volume of significant spills		The Army reports all oil, chemical, radiological, biological and etiological discharges in the United States and its territories to the National Response Center (NRC), www.nrc.uscg.mil/download.html. This indicator is partially reported, because the full information provided at the NRC website is not aggregated by agency information for the (e.g., the Army as an institution is not reported).
EN24	Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally		Not reported. The Army collects information of HW transported and treated, but does not publish it on a public website.
EN25	Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff		Not reported. In 2009, the ERDC/CERL released an evaluation of vulnerability to the water supply, *Army Installations Water Sustainability Assessment*. This included identifying, among several factors, the presence of threatened and endangered species, for pollutant non-attainment and population (Table 3), www.aepi.army.mil/docs/whatsnew/ERDC-CERL_TR-09-38.pdf. In Table 11, the report lists the location and watersheds at most risk. It does not identify the size of the associated water bodies in the watershed or specific protected status. This indicator is not reported because it does not address discharge and runoff directly.

GRI Indicator[69]	Description of GRI Recommended Report Content	2009 Status[70]	Link to 2009 Army Source Data
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation		For services (actions), the Army analyzes significant environmental impacts and potential mitigation measures in its NEPA documentation. For products, the Army is held to standards for hazardous materials it uses and handles, and has GP policies under FAR 52.223 for bio-based, recycled and energy-efficient products and alternatives to ODS, https://acquisition.gov/far/current/html/52_223_226.html. This indicator is partial because the extent of the mitigation is not tracked publicly.
EN27	Percentage of products sold and their packaging materials that are reclaimed by category		Not reported. Though the Army's mission is not driven by selling products, it does have a recycling policy and its installation pollution prevention programs work to recycle/reclaim package materials. This information is not tracked separately from total solid waste diversion
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations		The Army reports on fines and enforcement actions in the FY09 DEP ARC, Appendix B. It reports the number of permits in compliance with water regulations, new and open enforcement actions (74, 24) by statute and fines from the EPA ($247.2), State government ($303.3) and local government ($1.5) [thousands].
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce		The Army moves Soldiers and materials all over the globe and is aware of not only the environmental impact of this movement, but the risk to its Soldiers caused by a long logistical tail. The connection between fuel requirements and impacts is enumerated in the AESIS, published in 2009, www.asaie.army.mil/Public/Partnerships/doc/AESIS_13JAN09_Approved%204-03-09.pdf. The Army Environmental Policy Institute released a final technical report on casualty factors from fuel and water resupply convoys, www.aepi.army.mil/docs/whatsnew/SMP_Casualty_Cost_Factors_Final1-09.pdf. The Army will begin reporting its emissions from transportation in 2011 in accordance with EO 13514. It reports many air emissions in the FY09 DEP ARC, but does not break them out by transportation. AR 385-10 lists procedures for maximizing safety from spills and transporting explosives and other hazards, www.army.mil/usapa/epubs/pdf/r385_10.pdf. This indicator is partial because the full spectrum of transportation impacts is not discussed.
EN30	Total environmental protection expenditures and investments by type		The Army reports its total environmental protection expenditures and investments for natural and cultural resources ($180.4M), compliance ($409.4M), pollution prevention ($23.2M), restoration ($401.8M) and BRAC ($127.1M) in the FY09 DEP ARC, Appendix B.

ASR10—Global Reporting Initiative (GRI) Social Indicators

The Army does not report on many of the GRI labor, human rights, society and product responsibility indicators. The activities of the Army are largely regulated by law, EOs and DoD regulations.

Relevant workplace safety regulations include the Army Safety Program (AR 385-10), Chemical Agent Safety (AR 385-61), Range Safety (AR 385-63), Explosives Safety (AR 385-64), Risk Management (Field Manual 100-14) and many others at www.army.mil/usapa/epubs/385_Series_Collection_1.html.

The Army also adheres to all labor management regulations, as described in DoD Manual 1400.25, *Labor-Management Relations.*

The relevant positions for the GRI social indicators are the Assistant Secretary of the Army for Manpower and Reserve Affairs; DASA(ESOH); AMC Commanding General; and TRADOC Commanding General.

Table 12. 2009 Army Sustainability Report Social Indicators

GRI Indicator[71]	Description of GRI Recommended Report Content	2009 Status[72]	Link to 2009 Army Source Data
LA1	Total workforce by employment type, employment contract and region	■	Total workforce (Military and Civilian) attributes are found at the DoD's Statistical Information Analysis Division's online database of Personnel and Procurement Statistics, siadapp.dmdc.osd.mil/personnel/MMIDHOME.HTM.
LA2	Total number and rate of employee turnover by age group, gender and region	■	The Army summarizes this information in end strength reports as part of its AFR. Deployed forces by region are in the main APS document. A break out by demographic categories is in the FY09 Army Demographics Profile, www.armyg1.army.mil/hr/docs/demographics/FY09%20Army%20Profile.pdf. Additionally, the 2009 Defense Advisory Committee on Women in the Services (DACOWITS) report discusses retention by gender and grade, http://dacowits.defense.gov/Reports/2009/Annual%20Report/dacowits2009report.pdf. The Army's equal employment opportunity reporting in Management Directive 715 describes difficulties and plans for improving retention among different populations. It published FY08 data in late FY09, eeoa.Army.pentagon.mil/web/prog_comp/reports/reports.htm. More detail is available in the FY09 Annual Report on the Federal Workforce, www.eeoc.gov/federal/reports/fsp2009/index.cfm.
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations	■	The Army pay and benefits summary is found at www.Army.mil/WellBeing/pay.html, while Civilian pay and benefits summary is found at www.opm.gov/oca/09tables/index.asp.
LA4	Percentage of employees covered by collective bargaining agreements	□	U.S.C. Title 5, Chapter 71 provides for federal service labor management. DoD policy in this regard is in DoD Manual 1400.25-M Subchapter 711, http://www.cpms.osd.mil/ASSETS/562D774A47D74D2C9B031E6808B98510/m1400711.pdf There is no readily available document on the percentage of employees covered.
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements	■	For Reductions in Force, information must be presented to Congress 45 days before the reduction is to take place per 10 U.S.C. Chapter 81, Section 1597, uscode.house.gov/download/pls/10C81.txt. The employee must be notified within 60 days according to AR 690-351, page 7.1, www.army.mil/usapa/epubs/pdf/r690_351_1.pdf. DoD provides a guide for displaced employees on benefits and entitlement: www.cpms.osd.mil/ASSETS/9E43C08C5247416BF5A04AAEA84F910/deguide.pdf. DoD Manual 1400.25 Subchapter 711 Section 6.5 outlines reasons for suspending labor relations, www.cpms.osd.mil/ASSETS/562D774A47D74D2C9B031E6808B98510/m1400711.pdf. Any change in this value for specific collective bargaining agreements is outside of the scope of this report.

GRI Indicator[71]	Description of GRI Recommended Report Content	2009 Status[72]	Link to 2009 Army Source Data
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs		There are committees at installations with employees and management to discuss health and safety—especially at industrial installations. This is described in DoDI 6055.1 DoD Safety and Occupational Health Program, page 29, www.dtic.mil/whs/directives/corres/pdf/605501p.pdf. The Army does not track this information to verify performance.
LA7	Rates of injury, occupational diseases, lost days and absenteeism, and total number of work-related fatalities by region		Rates of injury caused by accidents are tracked in the US Army Combat Readiness/Safety Center website, https://safety.army.mil/statisticsdata/ARMYSTATISTICSREPORTS/tabid/373/Default.aspx. DoD also keeps a database of Personnel and Military Casualty Statistics, siadapp.dmdc.osd.mil/personnel/MMIDHOME.HTM.
LA8	Education, training, counseling, prevention and risk-control programs in place to assist workforce members, their Families or community members regarding serious diseases		Serious disease information is managed by the US Army Public Health Command (USAPHC), http://phc.amedd.army.mil/Pages/default.aspx/. The mission of the USAPHC is to promote health and prevent disease, injury and disability of Soldiers and military retirees, their Families and Army Civilian employees; and to assure effective execution of full-spectrum veterinary service for Army and DoD. MEDCOM provides medical services in the United States and in field units—including training and counseling. Prevention and risk-control programs are also led by USAPHC. DoD Directive 1010.10 *Health Promotion and Disease Prevention* establishes requirements for programs, www.dtic.mil/whs/directives/corres/pdf/101010p.pdf. Such as DoD Safety and Occupational Health Program, www.dtic.mil/whs/directives/corres/pdf/605501p.pdf. Technical details on specific diseases and how they are addressed by the Army is available from the Medical Technical Bulletins: www.army.mil/usapa/med/index.html. Deployment may expose Soldiers to many diseases, which are listed by the Deployment Health Clinical Center website, www.pdhealth.mil/ehc/default.asp. This site lists information, policy and training materials.
LA9	Health and safety topics covered in formal agreements with trade unions		U.S.C. Title 5, Chapter 71 provides for federal service labor management, this includes regulations for health and safety. All employees of the Army will be covered by the same health and safety regulations covered by DoDI 6055.1 *DoD Safety and Occupational Health Program*, www.dtic.mil/whs/directives/corres/pdf/605501p.pdf.
LA10	Average hours of training per year per employee by employee category		The FY09 AFR, pages 9 and 12, includes individuals trained in various courses. The Army reviews and updates training every 6 months. This indicator is listed as partial because this source shows employee training by kind of course, which to varying degrees may or may not correspond to employee category. In 2009, the Army launched the Army Training Network, an internal one-stop website for training resources.
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings		The FY09 AFR (pages 9–12) lists programs for skills management and training. The US Army Human Resources Command provides information on educational opportunities by employee type, including active, veterans and reserve, https://www.hrc.army.mil/site/menus.asp?cat=education. Much of this information is on internal websites. The Army Reserve Voluntary Education Program provides tuition assistance as well as the Montgomery GI Bill Program, https://www.hrc.army.mil/site/Reserve/Soldierservices/pay/mgib.htm. The Army has some additional programs for Wounded Warriors, including career and education assistance, www.aw2.army.mil/. AR 621-5 *Army Continuing Education System*, www.army.mil/usapa/epubs/pdf/r621_5.pdf, and AR 621-202 Army Educational Incentives and Entitlements, www.army.mil/usapa/epubs/pdf/r621_202.pdf, provide more information on responsibilities for education.
LA12	Percentage of employees receiving regular performance and career development reviews		All employees receive regular performance reviews, in accordance with Army policies. AR 623-3, *Personnel Evaluation, Evaluation Reporting System*, www.Army.mil/usapa/epubs/pdf/r623_3.pdf.

GRI Indicator[71]	Description of GRI Recommended Report Content	2009 Status[72]	Link to 2009 Army Source Data
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership and other indicators of diversity		The Changing Profile of the Army provides a look into breakdown of employees across several groups, www.Armyg1.Army.mil/hr/docs/demographics/Changing%20Profile%20report%20December%202008.pdf. This information can also be found in the Army demographic profile, www.Armyg1.Army.mil/hr/demographics.asp. The FY09 Annual Report on the Federal Workforce details the minority group membership and gender breakdown of Army employees as well as broad labor categories, www.eeoc.gov/federal/reports/fsp2009/index.cfm. This indicator is listed as partial because this source does not show the number of employees by age group.
LA14	Ratio of basic salary of men to women by employee category		This indicator is listed as partial because the Army finds it more representative of the military to discuss and report levels of retention and promotion by gender, as salaries are tied directly to rank and grade. The 2009 DACOWITS report discusses retention by gender and grade, http://dacowits.defense.gov/Reports/2009/Annual%20Report/dacowits2009report.pdf. More detail is available in the FY09 Annual Report on the Federal Workforce, www.eeoc.gov/federal/reports/fsp2009/index.cfm. Information on military pay rates can be found at http://www.dfas.mil/militarymembers/payentitlements/militarypaytables.html, while information on Army Civilian pay can be found at www.opm.gov/oca/09tables/index.asp.
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken		Not reported. The Army's policy on international transfer includes that the transfer adhere to US policy objectives, including human rights concerns, page 12, www.dtic.mil/whs/directives/corres/pdf/204002p.pdf.
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained		Not reported. The Judge Advocate General is responsible for human rights training, www.army.mil/usapa/epubs/pdf/r27_1.pdf. This is listed as not reported because detail on hours or how often this training is conducted is not provided in a public location.
HR4	Total number of incidents of discrimination and actions taken		The Army Equal Opportunity Reporting System database collects, records and maintains racial, ethnic group and gender data and statistics needed to support the Army Equal Opportunity Program, to include Affirmative Action Plan reporting requirements. The Army reported late in FY09 on the FY08 progress for the Equal Employment Opportunity Report Management Directive 715, eeoa.Army.pentagon.mil/web/prog_comp/reports/reports.htm. More detail is available in the FY09 Annual Report on the Federal Workforce www.eeoc.gov/federal/reports/fsp2009/index.cfm.
HR5	Operations identified in which the right to exercise freedom of association or collective bargaining may be at significant risk, and actions taken to support these rights		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor		Not reported. DoD Manual 1400.25 Subchapter 1403 Section 5.2 has a clause requiring DoD to adhere to child labor laws and 29 CFR 570, www.dtic.mil/whs/directives/corres/pdf/1400.25_SC1403.pdf.

GRI Indicator[71]	Description of GRI Recommended Report Content	2009 Status[72]	Link to 2009 Army Source Data
HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures taken to contribute to the elimination of forced or compulsory labor		Not reported. The Army has a Combating Trafficking in Persons policy and program that applies worldwide with a zero tolerance stance toward any and all activities associated with human trafficking, including mandatory training, http://www.combat-trafficking.Army.mil/policy.htm.
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken		Not Reported. 100 installations have consulted with federally recognized Indian tribes during Integrated Cultural Resource Management Plan development. 31 installations have known tribal rights that can be impacted. The Army tracks what resources it impacts and works with federally recognized tribes to mitigate impacts. See the FY09 DEP ARC, Appendix B Section 5, for more detail on the program. This indicator is not reported as incidents are not recorded and it is restricted to the United States.
SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating and exiting		BRAC has a regulated process for managing impacts to the community, described on the BRAC website—BRAC 2005 Army, http://www.defense.gov/brac/ and www.hqda.Army.mil/acsim/brac/index.htm. The Army also developed a Handbook for Growth Communities, www.hqda.Army.mil/acsim/brac/HandbookForGrowthCommunities.pdf. More information is available from the Office of Economic Adjustment, www.oea.gov/oeaweb.nsf/home.html. This indicator is listed as partial because these sources do not specify the operations that are included or the effectiveness of programs.
SO2	Percentage and total number of business units analyzed for risks related to corruption		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures		Secretary of the Army policy requires all Army military and Civilian personnel to attend ethics training annually, ogc.hqda.pentagon.mil. AR 350-1, *Army Training and Leader Development*, also contains training requirements, www.Army.mil/usapa/epubs/pdf/r350_1.pdf. The following website contains a link to 2009 Ethics training, ogc.hqda.pentagon.mil/EandF/training_EandF.aspx.
SO4	Actions taken in response to incidents of corruption		The US Army Criminal Investigation Command (USACIDC) is responsible for investigating procurement corruption as a felony crime, www.army.mil/usapa/epubs/pdf/r195_2.pdf. USACIDC as a DoD investigative agency refers to the Federal Bureau of Investigation (FBI) all significant allegations of bribery and conflict of interest involving military or Civilian personnel of DoD. DoD obtains the concurrency of the Department of Justice prosecutor or FBI before initiating independent investigations. www.dtic.mil/whs/directives/corres/pdf/552507p.pdf. This is listed as partial as actions are not listed.
SO5	Public policy positions and participation in public policy development and lobbying		As a federal entity, the Army is regulated in how it interacts in policy development; two Army-specific regulations are, AR 1-20 *Legislative Liaison*, www.Army.mil/usapa/epubs/pdf/r1_20.pdf, and AR 360-1 *Army Public Affairs Regulation*, www.Army.mil/usapa/epubs/pdf/r360_1.pdf.
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country		Not applicable to Army; as a federal entity the Army does not provide financial or in-kind contributions to political parties or politicians in the United States.
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.

GRI Indicator[71]	Description of GRI Recommended Report Content	2009 Status[72]	Link to 2009 Army Source Data
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations		The Army reports the amount of fines and enforcement actions related to environmental compliance in the FY09 DEP ARC. This indicator is listed as partial because the Army does not report publicly on other fines and sanctions.
PR1	Life-cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures		The Army's Acquisition Policy AR 70-1 (Section 1-4 (n-o)) identifies health, safety and pollution prevention requirements, www.Army.mil/usapa/epubs/pdf/r70_1.pdf. Pamphlet 70-3 Section VI also describes the Environmental, Safety and Occupational Health aspects of system acquisition, www.Army.mil/usapa/epubs/pdf/p70_3.pdf.
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction		The Army maintains an Interactive Customer Evaluation system that tracks comments on programs at each installation of each military branch (ice.disa.mil/). The Army also participates in the Federal Human Capital Survey, a tool that measures employees' perceptions of whether, and to what extent, conditions characterizing successful organizations are present in their agencies. The most recent results are found at www.fhcs.opm.gov/2008/Published.
PR6	Programs for adherence to laws, standards and voluntary codes related to marketing communications, including advertising, promotion and sponsorship		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship, by type of outcomes		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services		Not reported. The Army currently does not maintain or track this information, or the information was not readily available at the time this report was prepared. Future reports will reevaluate the reporting status of this GRI indicator.

Abbreviations

ACC	Army Community Covenant
ACUB	Army Compatible Use Buffer
ADT	Agribusiness Development Team
AESIS	Army Energy Security Implementation Strategy
AFR	Army Financial Report
AFC	Army Family Covenant
AFV	alternative fuel vehicle
AMC	US Army Materiel Command
AO	area of operations
APS	Army Posture Statement
AR	Army Regulation
ARCENT	US Army Central Command
ARNG	Army National Guard
ARNORTH	US Army North
ARRA	American Recovery and Reinvestment Act
ARSOUTH	US Army South
ASA	Assistant Secretary of the Army
ASCP	Army Sustainability Campaign Plan
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers
ASR	Army Sustainability Report
ASR07	Army Sustainability Report 2007
ASR09	Army Sustainability Report 2009
ASR10	Army Sustainability Report 2010
ATEC	US Army Test and Evaluation Command
BH	behavioral health
BOG	boots on the ground
BOG:Dwell	Ratio of boots on the ground time to dwell time at home station
BRAC	Base Realignment and Closure
C&D	construction and demolition
CERL	Construction Engineering Research Laboratory
CFR	Code of Federal Regulations
COCOM	combatant command
CONUS	continental United States
CY	calendar year
DACOWITS	Defense Advisory Committee on Women in the Services
DASA(E&P)	Deputy Assistant Secretary of the Army for Energy and Partnerships
DASA(ESOH)	Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health
DEP ARC	Defense Environmental Programs Annual Report to Congress
DoD	Department of Defense
DoDI	Department of Defense Instruction
DOE	Department of Energy
DOTMLPF	Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities
DPW	Directorate of Public Works
DRU	direct reporting unit
ECIP	Energy Conservation Investment Program

EISA	Energy Independence and Security Act
EMCS	energy management control system
EMS	environmental management system
EN	environmental (GRI indicator)
ENF	enforcement action
EO	Executive Order
EPA	Environmental Protection Agency
EPAct	Energy Policy Act
EPCRA	Emergency Planning and Community Right-to-Know Act
EPEAT	Electronic Product Environmental Assessment Tool
ER	Environmental Restoration
ERDC	Engineer Research and Development Center
EUSA	Eighth United States Army
FAR	Federal Acquisition Regulation
FBCE	fully burdened cost of energy
FBI	Federal Bureau of Investigation
FBRC	Fort Belvoir Residential Communities, LLC
FCTC	Fort Custer Training Center
FEMP	Federal Energy Management Program
FLSA	Fair Labor Standards Act
FOB	forward operating base
FORSCOM	US Army Forces Command
FS/HAAF	Fort Stewart/Hunter Army Airfield
FUDS	formerly used defense sites
FY	fiscal year
G3	third generation
GAO	Government Accountability Office
GHG	greenhouse gas
GP	green procurement
GPs	guiding principles
GRI	Global Reporting Initiative
GSHP	ground-source heat pump
HPSB	High Performance Sustainable Building
HQDA	Headquarters, Department of the Army
HW	hazardous waste
IMCOM	Installation Management Command
INRMP	Integrated Natural Resources Management Plan
INSCOM	US Army Intelligence and Security Command
ISO	International Organization for Standardization
ISSP	integrated strategic and sustainability plan
IUCN	International Union for Conservation of Nature
JLUS	joint land use study
KPP	key performance parameter
LA	labor (GRI indicator)
LEED	Leadership in Energy and Environmental Design
MDW	US Army Military District of Washington
MEDCOM	US Army Medical Command
MILCON	military construction

MNC-I	Multi-National Corps–Iraq
MW	megawatt
MWh	megawatt hour
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act
NETCOM/9th SC(A)	Network Enterprise Technology Command/9th Signal Command (Army)
NR	Natural Resources
NRC	National Response Center
OACSIM	Office of the Assistant Chief of Staff for Installation Management
OCONUS	outside the continental United States
OCR	office of coordinating responsibility
ODS	ozone-depleting substance
OEA	DoD Office of Economic Adjustment
OEH	occupational and environmental health
OPM	Office of Personnel Management
OPR	office of primary responsibility
OREGA	Office of Regional Environmental and Government Affairs
OSD	Office of the Secretary of Defense
PA	public agency (GRI indicator)
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act
SDD	sustainable design and development
SDDC	Surface Deployment and Distribution Command
SEC	Senior Energy Council
SECDEF	Secretary of Defense
SMDC/ARSTRAT	Space and Missile Defense Command/Army Forces Strategic Command
SPiRiT	Sustainable Project Rating Tool
SRP	Sustainable Range Program
SSPP	strategic sustainability performance plan
SW	solid waste
TES	Threatened and Endangered Species
TRADOC	US Army Training and Doctrine Command
TRI	toxic release inventory
USAASC	US Army Acquisition Support Center
USACE	US Army Corps of Engineers
USACIDC	US Army Criminal Investigation Command
USAPHC	US Army Public Health Command
USAR	US Army Reserve
USARAF	US Army Africa
USARC	US Army Reserve Command
USAREUR	US Army Europe
USARPAC	US Army Pacific
USASOC	US Army Special Operations Command
U.S.C.	United States Code
USFOR-A	US Forces–Afghanistan
USMA	United States Military Academy

End Notes

[1] This report details events and performance in fiscal and calendar years 2009. The Army Sustainability Campaign Plan was published in May 2010 and will be discussed in the next report.

[2] GRI is a network-based organization, which developed the guidelines through a consensus-seeking process with business, civil society, labor, and professional participants. In 2009, 1,272 entities—40 from the United States—reported to the GRI that they used the GRI guidelines.

[3] Title 10 U.S.C.

[4] Army Field Manual (FM) 3-0, Operations, "Foreword," February 2008.

[5] A brigade consists of 3,000 to 5,000 Soldiers.

[6] Stop-loss is the involuntary extension of a service member's active duty service under the enlistment contract to retain that member beyond the initial end of term of service date and up to the contractually agreed-upon end of obligated service.

[7] US Army War College, *How The Army Runs*, 2010.

[8] US Army TRADOC Pamphlet 525-3-0, *The Army Capstone Concept: Operational Adaptability, Operating under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict*, 2016-2018, December 21, 2009, www.tradoc.army.mil/pao/2009armycapstoneconcept.pdf.

[9] Office of the Assistant Secretary of the Army for Installations and the Environment, *Army Strategy for the Environment*, October 1, 2004, www.asaie.army.mil/Public/ESOH/doc/ArmyEnvStrategy.pdf.

[10] EO 13423, "Strengthening Federal Environmental, Energy, and Transportation Management," was signed by President George W. Bush in 2007.

[11] Statement of Deputy Under Secretary of Defense for Strategy, Plans, and Forces, Kathleen Hicks before the Senate Environment and Public Works Committee, October 28, 2009, www.defense.gov/qdr/transcript_hicks_20091028.pdf and the 2009 Army Posture Statement.

[12] See Note 11.

[13] Engineering Circular 1165-2-211, *Water Resource Policies and Authorities Incorporating Sea-Level Change Considerations in Civil Works Programs*, July 1, 2010, 140.194.76.129/publications/eng-circulars/ec1165-2-211/entire.pdf.

[14] Office of the Deputy Assistant Secretary of the Army for Energy and Partnerships, *Army Energy Security Implementation Strategy*, January 13, 2009, www.asaie.army.mil/Public/Partnerships/doc/AESIS_13JAN09_Approved%204-03-09.pdf.

[15] DoD, *Strategic Sustainability Performance Plan*, August 26, 2010, www.acq.osd.mil/ie/download/green_energy/dod_sustainability/DoD%20SSPP-PUBLIC-26Aug10.pdf.

[16] Office of the Deputy Under Secretary of Defense (Installations and Environment), *Fiscal Year 2009 Defense Environmental Programs Annual Report to Congress*, April 2010, www.denix.osd.mil/arc/ARCFY2009.cfm.

[17] DoD, Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, November 8, 2010 (As Amended Through May 15, 2011), http://www.dtic.mil/doctrine/new_pubs/jp1_02.pdf.

[18] US Army, *Army Sustainability Campaign Plan*, May 2010, http://aec.army.mil/usaec/sustainability/campaign-plan_2010.pdf.

[19] DoD, DEP ARC, FY09, Appendix B, Figures B-7.3-7.4, p. B-49, www.denix.osd.mil/arc/ARCFY2009.cfm.

[20] David E. Mosher et al., *Green Warriors: Army Environmental Considerations for Contingency Operations from Planning Through Post-Conflict*, RAND, Research Brief, 2008, www.rand.org/pubs/research_briefs/2008/RAND_RB9335.pdf.

[21] US Government Accountability Office, "GAO Report to Congressional Requesters: Afghanistan and Iraq, DoD Should Improve Adherence to Its Guidance on Open Pit Burning and Solid Waste Management," October 2010, www.gao.gov/new.items/d1163.pdf.

[22] Calendar year highlights are presented in the following fiscal year in Table 1.

[23] DoD, DEP ARC, FY09, Appendix B, Section 7, www.denix.osd.mil/arc/ARCFY2009.cfm.

[24] Memorandum, from Keith E. Eastin and Claude M. Bolton Jr., "Establishment of the Army Green Procurement Program," November 22, 2006, http://army-energy.hqda.pentagon.mil/docs/keyDirectives/Army%20Green%20Procurement%20Policy%2022%20Nov%202006.pdf.

[25] DoD, Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, November 8, 2010 (As Amended Through May 15, 2011), http://www.dtic.mil/doctrine/new_pubs/jp1_02.pdf.

[26] US Army (2009) Working for water: Humanitarian need sparks Soldiers' cool solution during hot situation, http://www.army.mil/article/29303/working-for-water-humanitarian-need-sparks-soldiers-cool-solution-during-hot-situation/?ref=news-africa-title3.

[27] The Army Senior Energy Council and the Office of the Deputy Assistant Secretary of the Army for Energy and Partnerships, Army Energy Security Implementation Strategy, January 13, 2009, www.asaie.army.mil/Public/Partnerships/EnergySecurity/docs/Army_Energy_Security_Implementation_Strategy_AESIS_January-2009.pdf.

[28] US Army, *Army Sustainability Campaign Plan*, May 2010, http://aec.army.mil/usaec/sustainability/campaign-plan_2010.pdf.

[29] US Army, *The Community Covenant*, www.army.mil/community.

[30] Memorandum on Army Safety and Occupational Health Objectives for Fiscal Year (FY) 2010, August 7, 2009, https://safety.army.mil/Portals/soh/docs/sohobjectives.pdf.

[31] FM 4-02, *Force Health Protection in a Global Environment*, February 2003.

[32] Title 10 U.S.C. Chapter 18, uscode.house.gov/download/pls/10C18.txt, National Response Framework, www.fema.gov/emergency/nrf/.

[33] US Army "Defense Support to Civil Authorities," *2010 Army Posture Statement* information paper, https://secureweb2.hqda.pentagon.mil/vdas_armyposturestatement/2010/information_papers/Defense_Support_to_Civil_Authorities_(DSCA).asp.

[34] US Army, *Fiscal Year 2009 United States Army Annual Financial Statement*, asafm.army.mil/Documents/OfficeDocuments/FinancialOps/Guidances/cfo/afr//fy09afr.pdf.

[35] See Note 34.

[36] See Note 34.

[37] US Army, *Army Sustainability Campaign Plan*, May 2010, http://aec.army.mil/usaec/sustainability/campaign-plan_2010.pdf.

[38] Assistant Chief of Staff for Installation Management, "The Army Universe," September 30, 2009, http://www.acsim.army.mil/od/assets/docs/Army_Universe_FY10.pdf.

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[47] Fairfax Village Neighborhood Center, A Leadership in Energy and Environmental Design Building, https://eko.usace.army.mil/_kd/go.cfm?destination=ShowItem&Item_ID=153075.

[48] National Institute of Building Sciences, "Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding," *Whole Building Design Guide*, www.wbdg.org/references/mou.php.

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[53] US Army Corps of Engineers–Civil Works, *FY2009 United States Army Annual Civil Works Financial Statement*, www.usace.army.mil/CECW/Documents/fy09_CWMDA.pdf.

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[56] DoD, DEP ARC, FY09, Appendix B, Section 1, www.denix.osd.mil/arc/ARCFY2009.cfm.

[57] DoD, DEP ARC, FY09, Appendix B, Figure B-6.8, www.denix.osd.mil/arc/ARCFY2009.cfm.

[58] Per Army Regulation 200-1, Environmental Quality: Environmental Protection and Enhancement, December 13, 2007: "Significant natural resources are present if one or more of the following criteria apply: (LD: 16 U.S.C. 670a). 1. Federally listed, proposed, or candidate species are on site, or critical habitat has been designated or proposed on the installation, and on-installation conservation measures are necessary to conserve the federally listed species. 2. Conservation-reimbursable forestry or agricultural outleasing activities consist of 100 acres or more. 3. Hunting or fishing takes place for which special state permits are issued by the installation in accordance with 16 U.S.C. 670a(b)(3). 4. The installation conducts intensive, on-the-ground military missions that require conservation measures to minimize impacts (for example, soil erosion control, prescribed fire) and sustain natural resources. Installations designated by the DCS, G–3/5/7 for management under the ITAM program meet this criterion. 5. Unique biological resources, wetlands, species at risk, or ecological issues require a level of planned management that can only be addressed by an INRMP. 6. In some cases, it may be difficult to determine whether an installation has significant natural resources. In these cases the ACSIM is delegated the authority to determine whether significant natural resources are present, and, therefore, whether an INRMP is required."

[59] Blue boxes include Army performance in FY09 toward the requirements set in EO 13514.

[60] EO 13423 requires that "fully implemented" EMSs (1) have been a subject of a formal audit by a qualified party, (2) have audit findings recognized by the appropriate level for the agency, and (3) are declared in conformance by a senior manager. DoD Instruction 4715.17, *Environmental Management Systems*, April 15, 2009, www.dtic.mil/whs/directives/corres/pdf/471517p.pdf.

[61] DoD, DEP ARC, FY09, Appendix B, Section 2, www.denix.osd.mil/arc/ARCFY2009.cfm.

[62] DoD, DEP ARC, FY09, Appendix B, Section 7, www.denix.osd.mil/arc/ARCFY2009.cfm.

[63] See Note 33. (FY09 Army AFR).

[64] US Army, 2010 *Army Posture Statement*, www.army.mil/info/institution/posturestatement/.

[65] See Note 43.

[66] EPAct 05, Public Law 109-58 (August 8, 2005); EISA 07, Public Law 110-140 (December 19, 2007), NDAA 2007, Public Law 109-264.

[67] EC is a GRI Economic Indicator, while PA is a GRI Public Agency Indicator.

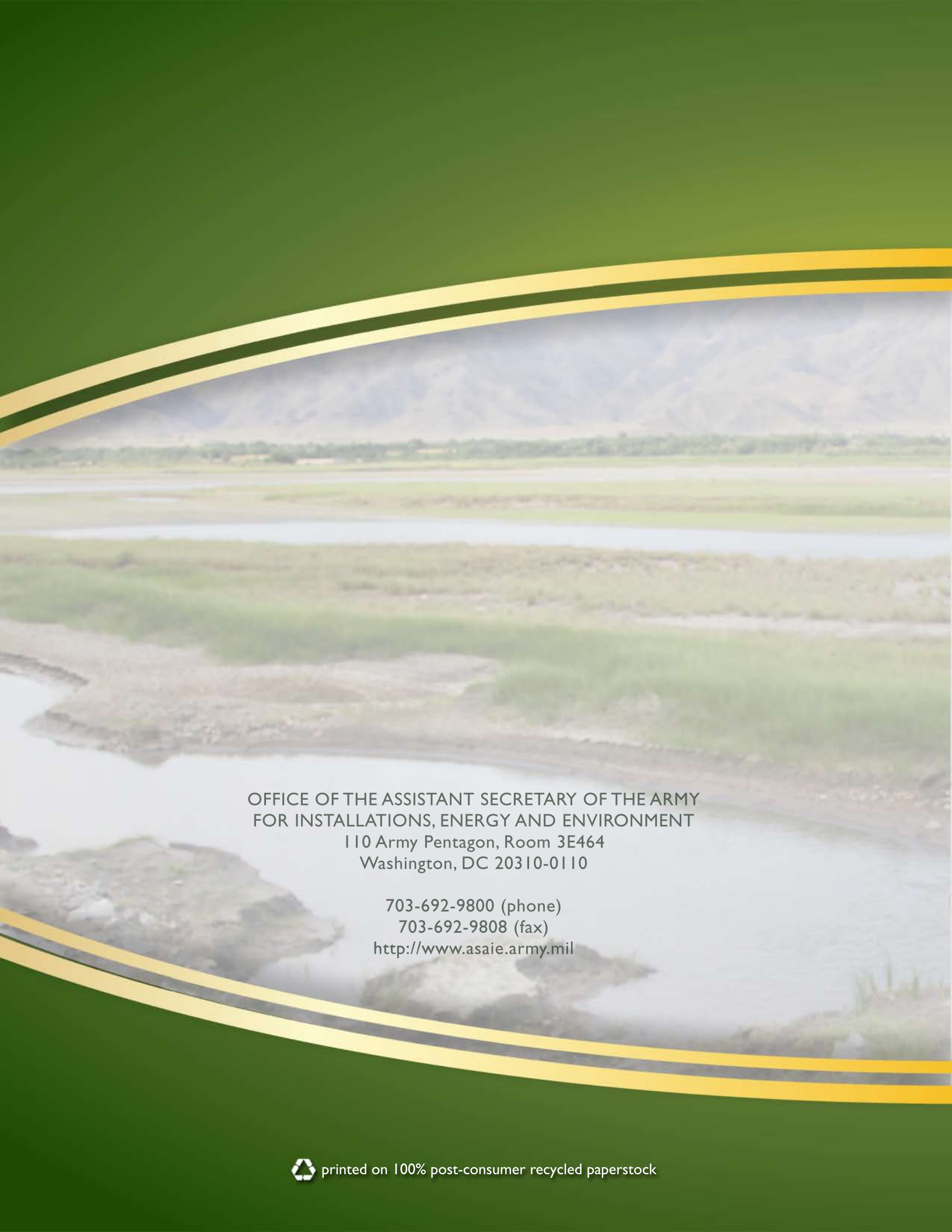
[68] A full bar indicates the GRI indicator is fully reported by the Army, a half full bar indicates the GRI indicator is partially reported by the Army, an empty bar indicates the GRI indicator is not reported or does not apply for the Army's purposes.

[69] EN is a GRI Environmental Indicator.

[70] See Note 70.

[71] LA is a GRI Labor Indicator, HR is a GRI Human Rights Indicator, SO is a GRI Social Indicator, and PR is a GRI Product Responsibility Indicator.

[72] See Note 70.



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