MDA Establishes Effective Metrics for Energy Reduction and Other Environmental Performance Improvements

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Purpose of the Presentation

- ❑ Highlight elements of MDA Environmental Sustainability Program

- ❑ Discuss metrics used to measure progress

- ❑ Present challenges we face and, in the spirit of continual improvement, where we plan to go from here

- ❑ Catalyze an exchange of ideas with similar efforts at other organizations
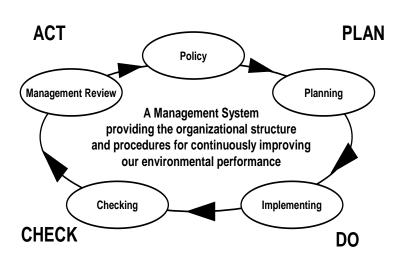
Program Elements

- ❑ MDA Environmental Sustainability Program elements:

  - ➢ Sustainable buildings;

  - ➢ More efficient fuel, electricity, and water use;

  - ➢ Green fleet management;

  - ➢ Enhanced electronics stewardship;

  - ➢ Green procurement; and

  - ➢ Reduced use and disposal of solid waste and toxic and hazardous chemicals

- ❑ For each element I will highlight some activities and then discuss metrics we are using to measure progress

Management of MDA's Environmental Sustainability Program

The Plan-Do-Check-Act EMS Model

ACT — PLAN

Policy

Management Review — Planning

A Management System providing the organizational structure and procedures for continuously improving our environmental performance

Checking — Implementing

CHECK — DO

- ❑ Is planned, implemented, monitored, and reviewed within the context of an organizational EMS

- ❑ Agency-Wide Work Group meets regularly

- ❑ Each Program Element has an objective and target and an action plans (who does what by when and what is produced to prove it)

- ❑ Program Element metrics and action plan progress are audited and briefed to top management during annual EMS reviews

Environmental managers facilitate sustainability, but Agency personnel in facilities, acquisition, IT support, supply/logistics, and others are where "the rubber meets the road"

Sustainable Buildings

❑ MDA is designing and constructing over 1,000,000 ft^2 of administration building space in FY09/10

❑ All MDA MILCON is being designed to be LEED Silver or Certifiable

❑ For FY10 and beyond, MDA is implementing a Sustainable Design Development Instruction with procedures for complying with Energy Policy Act of 2005 and EO 13423 and achieving LEED Silver performance levels

Sustainable Buildings (Cont'd.)

- **Von Braun III at Redstone Arsenal (**Huntsville, AL) under construction to be the largest LEED Certifiable complex in AL (lack of public transportation keeps us from achieving LEED Silver)

- **MDA's HQ at Fort Belvoir (**Alexandria, VA) to be LEED Silver

- **MDA Dahlgren, VA** to be Navy's first LEED Silver Certified building

- **MDA European Interceptor Site (EIS)** in Poland will be LEED Silver

EIS, one of DoD's most sophisticated and costly weapon systems, would exceed DoD and host nation environmental requirements

Sustainable Buildings Metrics

❑ The percent of contracts for MDA MILCON projects that incorporate requirements for LEED Certification

❑ The percent of MDA MILCON projects that are designed and built to LEED standards

❑ The percent of major renovations that incorporate LEED principles

More Efficient Fuel, Electricity & Water Use

❑ **Reducing electricity use by adjusting motion detectors:** Adjusted motion detectors to the lowest setting (5 vs 30 min) at Von Braun II to mitigate lights being left on when buildings are empty--now monitoring whether or not conducive to our work

❑ **Monitoring bulb performance:** stickers with installation dates are put next to florescent bulbs when replaced to better gauge reliability and cost savings

❑ **Deriving steam for HVAC from burning refuse:** tapped into steam line for existing Von Braun II and designing new Von Braun III to use this steam

Exploring options for increasing use of energy from refuse

More Efficient Fuel, Electricity & Water Use (Cont'd.)

❑ **Water temperature reductions:** temperature has been turned down in bathrooms and situation is being monitored for energy savings and user feedback (at Missile Defense Information and Operations Center in Colorado Springs)

❑ **Water use reductions:** conventional toilets and urinals were converted to automatic fixtures (at NCR), and now back to conventional fixtures, presumably because of reliability and maintenance problems. However, faucets perform reliably for washing hands and coffee cups.

More Efficient Fuel, Electricity & Water Use (Cont'd.)

❑ **Procurement of EPEAT-certified electronics:** A 20 % reduction in energy use because of increased efficiency is projected

❑ **Pursuit of renewable energy credits:** exploring opportunities to claim renewable energy credits with new construction at Dahlgren and at the HQCC building at Fort Belvoir. The design process is currently underway and the agency directive to pursue these types of opportunities is being followed.

More Efficient Fuel, Electricity & Water Use (Cont'd.)

❑ **Energy and resource conservation campaign:** beginning to implement an energy and resource conservation campaign to educate employees about energy reduction

  ➢ Providing goodies (e.g., mouse pads, "I'm doing my part" stickers, pens, etc.), and cash rewards for ideas that can be successfully implemented

  ➢ Building maintenance department posting stickers

  ➢ MDA newsletter publishing articles about energy conservation awareness and soliciting employee ideas

  ➢ Reducing water temperature at MDIOC came from someone reporting the issue after reading about conservation tips in the newsletter

Fuel, Electricity & Water Use Metrics

❑ MDA's objective is energy use reduction of 3% annually

❑ We are installing meters in new buildings

❑ Where we are tenants we also attempt to monitor usage-- with adequate data, we hope to convince landlords to lower our costs when leases come up for renewal (even though this is only one of many components that affect lease prices)

❑ We are implementing similar awareness programs in leased buildings as in buildings where MDA is the preponderant user and expect to achieve similar results

Green Fleet Management

Eliminate Unnecessary Vehicles:

❑ Comprehensive vehicle inventory/validation process to:

➢ Identify the type, location, and fuel for each vehicle

➢ Validate the need for each vehicle

❑ Results will allow better assignment of vehicles and elimination of unnecessary vehicles

Increase Proportion of Green Vehicles:

❑ MDA gives procurement preference to alternative fuel and higher fuel efficiency vehicles. In 2008, 23% of fleet was E-85. Hybrid and electric vehicles are becoming larger part of vehicle procurement strategy

Green Fleet Management (Cont'd.)

Increased Telecommuting:

❑ Already in place is an Agency policy grants employees the privilege to maximize teleworking to the extent it does not diminish performance

❑ Implementing the policy by developing telework Q&A lists posted at worksites, issuing a "Manager's Handbook" to promote the benefits of telework, and making it easier for employees to use laptops for offsite work

Green Fleet Management (Cont'd.)

Expanded Shuttle Bus Service:

❑ MDA provides shuttle buses in the NCR, however an ongoing business case analysis will advise action to modify or eliminate current contract (shuttle service in Huntsville was eliminated after a similar business case analysis)

❑ Fort Carson, CO provides bus service to MDA for test events and eliminates the need for dozens of rental cars

Infrastructure for Plug-In Hybrid (PIH) Vehicles

❑ Facility design for the European Interceptor Site includes PIH stations. New facilities and renovations will consider providing this PIH infrastructure

Green Fleet Management (Cont'd.)

Increased Use of Teleconferencing

❑ All personnel are currently required to justify the need for travel and to explain why teleconferencing cannot satisfy the need.

❑ All meetings attempt to make call-in numbers and copies of presentations available to obviate the need for physical attendance

> **These have been Agency practices for several years— now they can be brought to bear upon the task of environmental performance improvement**

Green Fleet Management Metrics

❑ Reduce total consumption of petroleum products by 2% annually through the end of FY 2015, relative to a 2008 baseline

❑ Increase the total fuel consumption that is non-petroleum-based by 10% annually

❑ Use PIH vehicles when they are commercially available at a life-cycle cost reasonably comparable to non-PIH vehicles

Enhanced Electronics Stewardship

- ❑ Achieved the 95% EPEAT Silver or Gold Federal Electronics Challenge target in 2008

- ❑ Expanding program in 2009 to include copiers, printers, and fax machines

- ❑ Adopted an electronics lifespan policy that is 5 yrs (exceeding 4 yr min)

- ❑ Shipping excess electronics to Defense Reutilization & Marketing Office (DRMO), which catalogues, stores, reassigns, and arranges for electronics to be donated or resold through GSA

- ❑ Dispose of unserviceable products using environmentally-sound methods

Enhanced Electronics Stewardship Metrics

❑ **MDA's Electronics Stewardship Plan** establishes targets for the proportion of electronic equipment that:

➢ Enable energy efficiency settings

➢ Set duplex printing as the default

➢ Have EPEAT, ENERGY STAR, or FEMP certification

Green Procurement

MDA is committed to procuring and monitoring sustainable goods acquisitions to demonstrate progress in achieving Environmental Stewardship Performance Objectives

Sustainable Product Attributes	MDA Environmental Stewardship Objectives
Developed using fewer natural resources & raw materials	Conserves resources, decreases foreign dependency on petroleum
Created with recycled, remanufactured, or bio-based content	Conserves resources, diverts waste & prevents pollution
Contains less toxic or non-toxic materials	Prevents pollution, reduces environmental liability
Exhibits longer life span	Diverts solid waste, prevents pollution
Exhibits high energy or water efficiency during production or use	Conserves resources, decreases foreign dependency on petroleum, prevents pollution, reduces greenhouse gas emissions
Exhibits reduced packaging and/or minimized product delivery/transit distances	Conserves resources, diverts solid waste, curbs emissions associated with transport, prevents pollution
Designed for return, reuse, or remanufacture at the end of life	Diverts solid waste, prevents pollution

Green Procurement (Cont'd.)

MDA Green Purchasing Program Requirements

❑ Annual Green Procurement Training mandatory for all procurement staff. Implementation is audited annually

❑ Improved database for tracking of green purchases

❑ Increased number of contracts with green clauses:

  ➢ "Green" clauses in the FAR and DFAR are inserted into contract documents as appropriate

  ➢ Sustainable goods and services requirements added to contract as early as possible in the acquisition Process, i.e., in Project Initiation and Requirements Documents

  ➢ Annual audits conducted to verify sustainable goods and services specifications are included in contracts

  ➢ Green Procurement added to Contracting Requirements Checklist

Green Procurement Awareness

MDA's Supply Store Proudly Stocks
GREEN PRODUCTS

What Are Green Products?

Green Products aren't always "green" but they do have less of an impact on human health and the environment than other products. Green Products integrate environmentally friendly characteristics into their design, manufacture, operation, and considerations for their ultimate disposal.

Green Products are beneficial because they:

> - use less energy, water, or fuel
> - are made with recycled or remanufactured materials
> - are produced with less raw materials
> - contain biobased ingredients
> - have less packaging
> - are less-toxic or non-toxic
> - last longer

Why Choose Green Products?

Because you can! But also, MDA is committed to reducing our environmental footprint and complying with federal requirements to increase our use of Green Products. So, go GREEN – it's a win-win for us and the environment!

Which MDA supplies are Green Products?

Each Green Product in the Supply Store is now identified by this special label – be sure to look for it when you make your supply selections!

Simple Green
Each (1)
Please do not take more than 1

DOI Infrastructure & Environment

Green Procurement Awareness (Cont'd.)

Results:

❑ NCR/Dahlgren Supply Stores (2008)

Of 496 active expendable office supply items, 181 labeled as Green (37%)

❑ Huntsville Supply Stores (2008)

Of 492 active expendable office supply items, 176 labeled as Green (36%)

> **Even without a baseline we are confident that the new program is having positive results and we now we have a baseline for next year**

Green Procurement Metrics

❑ **MDA's Green Purchasing Program** establishes targets for the percent of:

➢ Procurement staff that meet annual Green Procurement Training requirements

➢ Procured goods categorized as "green"

➢ Contract Project Initiation and Requirements Documents where sustainable good and service requirements have been added

Solid Waste and Toxic & Hazardous Chemical Reduction

Toxic and hazardous chemical/material reduction:

➢ Procurement of EPEAT-certified electronics will lead to, at a minimum, a 20 % reduction in the use of hexavalent chromium and lead

➢ Periodic and regular review of chemical/material inventories, followed by recommendations for less toxic substitutions (when practicable, e.g., replacing ODS refrigerants with non-ODSs)

➢ Actively participate in host installations' P2 and hazardous chemical management plans.

Solid Waste and Toxic & Hazardous Chemical Reduction (Cont'd.)

Solid waste reduction through re-use program:

❑ When employees transfer or move, the useable first-class supplies are returned to the supply stores and re-issued

❑ Excess useable first-class items are returned to stock at the warehouse

Solid waste reduction through recycling:

❑ Supply stores actively maintain recycling containers for used batteries

❑ Empty toner cartridges are returned to the supply stores for recycling

Solid Waste and Toxic & Hazardous Chemical Reduction Metrics

- ❑ Study the reduction of toxic and hazardous chemicals and materials acquired, used, or disposed

- ❑ Study increased diversion of solid waste as appropriate

- ❑ Maintain cost-effective waste prevention and recycling programs

- ❑ Complete of the Solid and Toxic Waste Reduction Study by September 2009 and develop targets at that time

This is an example of an action plan where the objective is to study the feasibility and the target is to complete the study on schedule

Challenges

❑ Our Environmental Sustainability Program is a new one. The obvious challenge is overcoming resistance to change in instituting sustainability throughout the agency

❑ The effort to bring about environmental performance improvement takes significant human and financial resources

❑ Embarking on organizational re-engineering and an aggressive communication and awareness-building initiative begin to address these challenges

Small preliminary successes seem to be expanding into larger ones