



Department of Information Systems
Arkansas. A State of Technology.

Strategic Energy Plan (StEP)

For

Arkansas Department of Information Systems

0470

Fiscal Year 2010

Energy Manager

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Objective:

To meet the requirements of Executive Order (EO) 09-07 issued May 28th, 2009:

“TO ENCOURAGE THE REDUCTION OF ENERGY CONSUMPTION BY STATE AGENCIES AND THE ENVIRONMENTAL IMPACT OF STATE AGENCY OPERATIONS”

EO 09-07 requires Executive Branch Agencies and other agencies to develop individual agency strategic energy plans (StEPs). Each StEP must contain detailed provisions for the collection and periodic monitoring of data on the agency's annual energy use. The data will permit the agency to evaluate where and how energy is used.

Each affected agency shall transmit a copy of its StEP to the Office of the Governor, along with a proposed timeline for implementation of each aspect of its plan, on or before October 31, 2009.

Section I: Energy Team Overview

A. Description of Energy Team

The Arkansas Department of Information Systems (DIS) Energy Team is comprised of 18 representatives from the following divisions and functions within the organization: Administration; Enterprise Systems; Enterprise Network; Enterprise Operations; Finance; Contracts and Procurement; Customer Relations; AWIN; Project Management; and other Stakeholders. The Energy Team was established in October of 2009 and will meet monthly to carry out the agency's Strategic Energy Plan. Action Plans will be developed for applicable strategies in order to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates. The team will also discuss energy management issues, such as organization-wide energy use reduction policies, data center electrical usage, maintenance issues, and capital improvement plans.

B. List of Energy Team members:

- i. Debbie L. Martin – Energy Manager / Operations Center Manager
- ii. Claire Bailey – StEP Executive Sponsor / Agency Director, State CTO
- iii. Jeff Dean – Executive Administration representative / Chief Operating Officer
- iv. Judy Hollowell – Senior Staff representative for DIS Strategic Plan Strategy 3.1 “Lead the green technology initiative” / DIS Project & Enterprise Program Management Administrator
- v. Scott Utley – Senior Staff representative for the DIS Strategic Plan Strategy 1.5 “Ensure responsible disposal of waste generated at DIS” / DIS Division Administrator - Enterprise Architecture & Services
- vi. Brian Fortson – State Data Center representative / DIS Division Administrator – Enterprise Operations
- vii. Donnie Matthews – Customer Relations / DIS Technical Accounts Specialist
- viii. Rachel Reginelli – Agency communications / Public Information Coordinator
- ix. Corbin Naekel – Enterprise Systems representative for servers and PCs / State Systems Specialist



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- x. Rick Martin. – Enterprise Network representative for network equipment at DIS and the University of Arkansas, U of A Fayetteville and UAPB sites / State Network Support Lead
- xi. Keith Glover – IT Asset Management (ITAM) representative / ITAM Manager
- xii. Lou Ann Elmore – Fiscal representative / Accounting Coordinator
- xiii. Mike Hill - Contracts and Procurement representative / Procurement Coordinator
- xiv. Marecia Griffin - Contracts and Procurement representative / Contracts and Buyer
- xv. Mary McCoy – Contracts and Procurement representative / Buyer
- xvi. Jim Gay – Telephone systems - Service Orders representative / DIS Account Analyst - Service Orders
- xvii. John Benjamin – Project Management and Leadership Team representative / DIS Project Manager
- xviii. Timothy Bales – AWIN representative / AWIN Network Support Analyst

C. Policy statement developed regarding energy use and cost reduction

Per the responsibilities charged to our agency in the Governor's Executive Order 09-07 and as the principal agency responsible for information technology in Arkansas, the Department of Information Systems (DIS) is committed to serve as a leader within state government in the responsible use of technology to minimize the impact on energy and natural resources. DIS is committed to reducing energy consumption and conserving natural resources wherever and whenever possible. We also believe that the prudent management of our state's technology infrastructure will be beneficial to our agency employees and taxpayers in financial management and energy savings.

DIS has established an energy team for the efficient management of energy and natural resources. The fulfillment of this policy is the joint responsibility of the DIS Energy Team, the agency director and supporting personnel. Cooperation is required on all levels within DIS for the success of this policy.

DIS maintains accurate records of energy consumption and costs on a monthly basis. An energy audit will be conducted annually and recommendations will be made to update the energy program. Energy conservation guidelines and procedures will be reviewed and approved by the DIS Director. Information will be furnished to the Arkansas Energy Office and the Governor's Office regarding the goals and progress of our Energy Conservation Program.

Section II: Facility/Site Description

A basic list of facilities with gross square footages is included as an appendix to this plan via the Arkansas StEP Facility Data Sheet to identify and gather the data needed to benchmark building(s) and input the data to Green.Arkansas.gov for future use by the Arkansas Energy Office in accordance with EO 09-07 and Act 1494.

Information included is as follows:

Facility Name, Address (street, city, state, zip code), County, Year Built, Property Type, Space Type - Category, Gross Square Footage, Operating Hours, Workers on Main Shift, and Number of Personal Computers.



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DIS leases office space from the Arkansas Building Authority (ABA) in the Multi-Agency Complex (MAC) at One Capitol Mall. The full service lease includes utilities in the lease payment. DIS is billed monthly, above the lease amount, for the data center's actual electrical usage as recorded via sub-meters. ABA will report all utility information for DIS leased space. ABA provides data center electrical usage and cost information for monitoring and benchmarking purposes to DIS. This information will be used for Goal 1, Strategy 1.3 to identify and implement five or more initiatives to reduce power consumption in the data center.

DIS leases warehouse space through ABA at 2201 Brookwood. ABA manages this space for a private owner. Electric and gas utilities are not included in this lease, therefore DIS will report utility usage for this facility.

DIS also leases space from the University of Arkansas on the Fayetteville and Pine Bluff campuses. These spaces house network equipment for two "Point of Presence" sites on the state network to provide redundancy for the network. These are full service leases which include utilities, therefore energy use for these sites will not be reported.

DIS manages the Arkansas Wireless Information System (AWIN) for Arkansas State Police (ASP) owned facilities. Facility and utility information is provided to ASP for reporting purposes.

Section III: Energy Plan Elements

Goal 1: Reduce the agency's annual maintenance and operating budget devoted to energy consumption (usage) in accordance with Executive Order 09-07 and Act 1494 of 2009.

As stated in Act 1494, energy use in all existing state buildings shall be reduced by twenty percent (20%) by 2014 and thirty percent (30%) reduction by 2017 based on energy consumption for the 2007 - 2008 fiscal year (FY), if the savings can be justified by a life cycle cost analysis.

Strategy 1.1: Collect annual energy usage data for facilities owned or leased by the reporting organization

Objective 1.1.1: Describe provisions for the collection and periodic monitoring of detailed data on the agency's annual energy use in state-owned or leased facilities and offices. This should include a narrative for the first reporting year of FY2009 and the benchmark year of FY2008 (starting July 1, 2007 and ending June 30, 2008).

Because DIS is housed in a multi-agency building owned by ABA, DIS is not required to collect and report energy use data. DIS will partner with ABA to reduce energy consumption for leased space at the MAC.

The electrical usage for the DIS hosted State Data Center in the MAC is measured by four sub-meters. ABA provides monthly usage readings and cost calculations to the DIS Energy Manager. This information is used for monitoring and benchmarking purposes of the data center's power consumption, utility rates, and cost. The data has been collected since January 2007; therefore data for the benchmark year FY2008 and the first reporting year FY2009 is available. The data is currently stored in an Excel workbook and will be converted to an Access database. The



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Enterprise Operations Division management and the DIS Energy Team will have access to this information which is stored in SharePoint.

DIS has collected electrical and gas utility data for the warehouse facility. This facility was leased in August 2006; therefore data will be available for the benchmark year FY2008 and the first reporting year FY2009. The data is currently stored in an Excel workbook and will be converted to an Access database. The DIS Energy Team will have access to this information which is stored in SharePoint.

Objective 1.1.2: Gather energy usage from utility meters

Ongoing – see statements in Objective 1.1.1

Objective 1.1.3: For data collection and future reporting purposes, complete the data collection worksheets via the Arkansas StEP Facility Data Sheet (Excel workbook) and submit to the Green.Arkansas.gov website before April 1, 2010.

Tab 1 – Energy Team, Tab 2 – Facility Information, and Tab – 3 Space Type were completed and submitted by October 31, 2009. Data collection information will be reported for the warehouse facility energy usage before the April 1, 2010 deadline.

Strategy 1.2: Collect annual energy usage data for vehicle fleet owned or leased by the reporting organization in order to improve fleet vehicle efficiency. Include annual average mileage of fleet, number of vehicles in fleet, and age of vehicles in fleet.

Objective 1.2.1: Determine annual miles per gallon of vehicle fleet currently as a benchmark.

For the current year FY2010, the DIS vehicle fleet totals seven, averaging 18.81 annual miles per gallon. There were no hybrid vehicles in the fleet during past years, but the current fleet includes three vehicles that can use alternative fuel types. DIS is in the process of calculating the actual annual MPG information for past years for comparison.

Objective 1.2.2: Determine annual miles per gallon of vehicle fleet after purchasing more fuel efficient vehicle(s)

Strategy 1.3: Identify and implement five (5) initiatives to reduce power consumption in the data center or server room by 10/31/09.

In many organizations, data centers are the largest consumer of energy. According to a fact sheet on the National Data Center Energy Efficiency Information Program published by the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA) on March 19, 2008 “U.S. data centers consume a growing portion of the U.S. energy/electricity supply due to growing demand for the services they provide. Data centers used 61 billion kWh of electricity in 2006, representing 1.5% of all U.S. electricity consumption and double the amount consumed in 2000. Based on current trends, energy consumed by data centers will continue to grow by 12% per year.”

The responsibility for hosting the State Data Center comes with a high priority for DIS to be a good steward of energy efficiency. Green Information Technology (IT) isn't just about energy efficiencies but also about operational efficiencies that can improve IT overall.



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With recent efforts of equipment replacement, consolidation, and virtualization of systems, DIS has seen a 5.84% reduction in data center electrical usage as reported in FY2008. DIS will continue to manage the State Data Center for optimal energy efficiency, but in the event that new state systems are developed and hosted in the data center or other agencies choose to relocate systems to the data center, the power load may increase. DIS may not see an overall power reduction, but will work to reduce consumption per operating system, which even if the total number of servers goes up and overall usage does not decrease, DIS should be able to show power consumption per operating system going down by the requested percentages of 20% reduction by 2014 and 30% reduction by 2017.

Objective 1.3.1: Develop and document initiatives by October 31, 2009

Initiatives:

1.3.1.1: Hot aisle/cold aisle configuration – maintain existing and continue in other areas as new equipment is commissioned and old equipment is decommissioned.

1.3.1.2: Air flow management - maintain existing and continue in other areas as necessary with the proper placement of perforated / vented floor tiles, KoldLok brush grommets, SubZero cubes and blanking panels.

1.3.1.3: Cable management –to provide improved air flow under the raised floor area of the data center, continue the removal of decommissioned power and data cabling, utilize cable management trays in applicable areas, utilize structured cabling, and work toward meeting design specifications outlined in the TIA-942 “Telecommunications Infrastructure Standard for Data Centers.”

1.3.1.4: Server consolidation and virtualization – DIS is in the process of a server optimization project that is composed of two efforts:

- 1) Optimization of existing server resources using virtualization. This project is in progress with physical hardware for the new virtual infrastructure on site and other infrastructure preparations underway (i.e. racks, electrical, storage, toolsets, etc). We expect a majority of the servers used by DIS (i.e. internal servers) to be migrated to the virtual infrastructure by the end of 2009. Other appropriate workloads should be migrated by the end of FY2010.
- 2) Creation of a new line of service to offer virtual hosting to our customers. This offering will take advantage of the same virtual infrastructure above, but will offer a new line of service to customers that will save the State of Arkansas a considerable amount of energy, hardware, and administration costs for those participating in the service. On average, approximately \$3,000 is saved for every workload that is virtualized. Advanced availability and recovery services will be available as a part of this service for customers who have a limited tolerance for downtime.

1.3.1.5: Install equipment that meets the Environmental Protection Agency (EPA) ENERGY STAR certification and/or Electronic Product Environmental Assessment (EPEAT) rating requirements as old equipment is refreshed or for new equipment installations. This would be as applicable for network and data center server equipment.



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1.3.1.6: Replace aging power and environmental systems, i.e. centralized Uninterruptible Power Supply (UPS), battery string, diesel generator, and computer room air conditioners or handlers (CRACs or CRAHs). Equipment with variable speed drives should be installed.

1.3.1.7: Power distribution – bring transformers, switchgear, backup power systems closer to the load (servers, etc. in the data center). Ten to 15 percent of total electrical power is lost in these systems. Efficiencies can be gained by having these systems closer to the load.

Objective 1.3.2: Document plans to implement initiatives

Initiatives: – Action Plans will be developed for each of these to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

1.3.2.1: Hot aisle/cold aisle configuration

1.3.2.2: Air flow management

1.3.2.3: Cable management

1.3.2.4: Server consolidation and virtualization

1.3.2.5: Install equipment that meets EPA ENERGY STAR certification and/or EPEAT rating requirements

1.3.2.6: Replace aging power and environmental systems

DIS plans to complete the installation of two new American Power Conversion (APC) UPS systems by 11/30/2009 that will replace a 23-year old Emerson-Liebert centralized UPS. Action plans will be developed for the other identified systems.

1.3.2.7: Power distribution

Objective 1.3.3: Develop a means to measure power consumption relative to work output, for example with metered rack power distribution units.

DIS will standardize with metered rack power distribution units (PDUs) for metering at the server level by FY2011. A more specific date will be determined with the development of an action plan for this objective.

Objective 1.3.4: Develop administrative policies that support green initiatives.

DIS will develop policies by FY2011 that require the purchase and installation of ENERGY STAR and EPEAT compliant equipment as applicable for the data center equipment refresh schedule, de-commissioning of unused equipment and cabling, use of blanking panels, KoldLoks, and SubZero cubes for airflow management, and consolidation of underutilized servers. A more specific date will be determined with the development of an action plan for this objective.

Strategy 1.4: Identify and implement five (5) initiatives to reduce power consumption in the office and support areas by 10/31/09

Objective 1.4.1: Develop a power consumption model for office and support area assets



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Research and monitoring of areas has been completed by DIS staff. A model will be developed by FY2011. A more specific date will be determined with the development of an action plan for this objective. For more detail, see Strategies 2.6 Computer Equipment; 2.7 Paper (and Printer) usage, and 2.8 Non-Essential Electricity Usage.

Objective 1.4.2: Develop administrative policies that support green initiatives

Policies will be developed by first quarter FY2011 to support power saving features on computer and peripheral equipment, recycling, paper usage, ENERGY STAR and EPEAT equipment, non-essential plug load, and areas addressed more specifically in the Goal 2 strategies 2.3, 2.6, 2.7, and 2.8. A more specific date will be determined with the development of an action plan for this objective.

Each employee will be expected to take ownership for the environmental impact of their own work activities and to minimize that impact whenever possible.

Goal 2: Promote agency operations and practices that will reduce, to the extent practicable, the environmental impact of the agency's overall operation

Strategy 2.1: Materials, Products and Services – develop new or revise existing standards and criteria for purchasing materials, products or services which:

See Appendix 1 for the DIS Environmentally Preferable Purchasing Guidelines which address these objectives.

Objective 2.1.1: Align with the Environmental Protection Agency's ENERGY STAR Qualified Products program

Objective 2.1.2: Consider the availability of bio-based products, as required by Act 542 of 2005

Objective 2.1.3: Express a preference for the purchase of products that are made from, and/or packaged with, recycled materials, and products that are, themselves recyclable in whole or in part

Strategy 2.2: Fuel-efficient Fleet - establish criteria for a more fuel-efficient fleet that will result in a more fuel-efficient agency and State-vehicle fleet

Objective 2.2.1: When replacing vehicles, consider fuel efficiency for the vehicles' intended use and return on investment (ROI) of flex-fueled vehicles

DIS will follow the Office of State Procurement (OSP) guidelines when replacing vehicles. According to section 22-8-206, all vehicles will be ordered by the Department of Finance and Administration (DFA) for all agencies classified as a Service Bureau Agency. After researching the vehicle contract on the OSP website and determining the type of vehicle needed, the agency will fill out a SAVA form through the Office of Information Services (OIS) web site. If the request is approved, the OIS will notify the agency. The agency will then provide necessary fund information including assets, to OIS, which will then prepare the requisition to order the vehicle. State procurement will only manage the order if it is over 1-ton, or if it is not on the existing contract, and only after receiving approval from the OIS.



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Objective 2.2.2: Utilize electric vehicles for maintenance and operational needs

Action Plans will be developed for each of these (Objective 2.2.2 – 2.2.4) to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

Objective 2.2.3: Encourage walking and bicycle use via enhanced sidewalks, bike routes, and other pathways.

Objective 2.2.4: Choose a vehicle that fits the job

Objective 2.2.4: Combine trips when possible

Objective 2.2.4: Ride share

Objective 2.2.4: Reduce idling of vehicle.

Don't allow vehicles to idle on DIS property or while onsite at customer locations. Three percent of our nation's fuel is wasted by idling. Ten seconds of idling uses more fuel than restarting the vehicle. Idling also impacts air emissions. An idling engine produces more emissions because the vehicle is not running at an optimum level of performance. A policy patterned after ADEQ's will be developed by first quarter FY2011. A more specific date will be determined with the development of an action plan for this objective.

Strategy 2.3: Recycling Program – establish or revitalize recycling programs for paper and plastic waste, and participate in any statewide equipment recycling program that may be established for equipment that can be utilized by other State agencies

Objective 2.3.1: Implement a recycling program for paper, plastic, glass, cardboard, aluminum, and decommissioned IT hardware plus cabling (data and power) by 12/31/09

DIS implemented a recycling program for paper during FY2006 for data center print waste and confidential papers. This policy was updated to include all paper in FY2008. The policy is published at:

http://home.dis.arkansas.gov/PROCESS_DOCUMENTATION/Process_Documents/Forms/AllItems.aspx. Select - Operations and the Shredding and Recycling Procedure. See Appendix 2 for the policy.

DIS has an established Recycling Committee. The members of this team include Tim Hawkins, Daryl Cox, Kenitra Woolfolk, Rick George, Keith Glover, and Kevin Morse. Scott Utley serves as the sponsor.

DIS also has a policy in place that addresses the decommissioning of IT hardware (servers, PCs, etc.) and cabling and preparing items for recycling via the Arkansas Marketing and Redistribution service. The policy is published at:

http://home.dis.arkansas.gov/PROCESS_DOCUMENTATION/Process_Documents/Forms/AllItems.aspx. Select – Systems Management and the ESM – Server Decommission document. See Appendix 3 for the policy.



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Action Plans will be developed for other recycling policies to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

Policies and procedures will be posted on the DIS Intranet under Process Documentation. Announcements of these will be posted on DIS LiveWire, the agency electronic bulletin board, in DIS HotWire, the agency employee newsletter, and made during DIS manager meetings and employee forums.

Objective 2.3.2: Participate in any state-wide contracts for recycling of toner, electronics, and the above mentioned items.

DIS participates in the State Paper Recycling Program and upon award of SP-10-0113 by the Office of State Procurement may participate in the Comprehensive Recycling Program which includes metal and plastic containers. Plastic containers marked by #1 or #2 inside a triangle are eligible for recycling.

Strategy 2.4: Lighting Systems - establish and implement policies and practices that will reduce energy consumption attributable to lighting systems, including, but not limited to the following:

DIS will follow guidelines and initiatives from ABA regarding lighting systems.

Objective 2.4.1: Policies that ensure lighting systems are turned off during non-operating hours

Objective 2.4.2: Convert to more energy-efficient lighting systems and bulbs via compact fluorescent lamps (CFLs) etc.

ABA is working to replace ballasts and lamps in all T-12 fixtures with more energy-efficient lighting by installing electronic ballasts and T-8 bulbs in the buildings the agency maintains. See also the ABA Minimum Standards and Criteria Sections 2-802 and 803.

<http://www.arkansasbuildingauthority.com/about/manual.html>

Objective 2.4.3: Use of occupancy light sensors to prevent energy waste in unoccupied areas and/or buildings, along with copy rooms, conference rooms, etc.

DIS will support ABA if this is named as an objective, especially for the staff and office space. If ABA deems the installation of zone controlled light sensors in the data center area as necessary, DIS will support this objective. DIS will work with ABA according to the needs of staff working around the clock in the data center.

Objective 2.4.4: Maximize use of natural lighting whenever possible and consistent with temperature control

In recent years, DIS has remodeled much of its office space into open areas filled with cubicles. To the best extent possible, cubicle areas are arranged to benefit from natural lighting.

Objective 2.4.5: Remove and reduce other non-essential lighting such as decorative office lamps

Objective 2.4.6: Install light emitting diode (LED) exit signs



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Strategy 2.5: Heating, Ventilation, and Air Conditioning Systems - establish measures to ensure that Heating, Ventilation, and Air Conditioning (HVAC) systems operate at reduced levels during non-operating hours

DIS will follow guidelines and support initiatives from ABA regarding HVAC systems.

Objective 2.5.1: Implement schedules to control HVAC systems

Objective 2.5.2: Set/adjust timers for air conditioning, etc.

Objective 2.5.3: Install or expand energy management / building automation systems

Strategy 2.6: Computer Equipment – establish policies and practices designed to ensure that all electrically-powered equipment, including computer equipment, is turned off when not in use, and that personal computers are configured with default settings that ensure that computers go into "sleep mode" after 30 minutes or less of non-use

Objective 2.6.1: Purchase ENERGY STAR / EPEAT certified computers, printers, copiers, etc.

Effective July 9, 2009, EPA has strengthened the requirements for earning the ENERGY STAR in Version 5.0. For Desktop/integrated desktop and notebook computers, products must meet stringent TEC requirements for estimated energy consumption.

DIS plans to purchase and install equipment that meets the ENERGY STAR certification and/or EPEAT rating requirements as it is refreshed or for new installations as applicable.

EPEAT is a system that helps purchasers evaluate, compare, and select electronic products based on environmental attributes. The system currently covers desktop and laptop computers, thin clients, workstations, and computer monitors. Desktops, laptops, and monitors that meet 23 required environmental performance criteria may be registered in EPEAT by manufacturers in 40 countries worldwide. Registered products are rated Gold, Silver, or Bronze depending on the percentage of 28 optional criteria they meet above the baseline criteria. EPEAT operates an ongoing verification program to assure the credibility of the registry.

Per the DIS October 21, 2009 equipment inventory, DIS has EPEAT rated equipment at the following levels: 0% Bronze, 0% Silver, and 15.7% Gold. This 15.7% Gold represents 49 of 293 computers, which are primarily Dell laptop / notebook computers. By FY2011, the DIS' goal upon equipment refresh is to reach the level of: 25% Silver, and 50% Gold for all desktop and laptop / notebook computers. A more specific date and target percentages will be determined with the development of an action plan for this objective.

Objective 2.6.2: Set timers for computers to go into sleep mode after 30 minutes or less of non-use

A policy and action plan will be developed for this objective to ensure that the objective is further developed with assigned activities, persons responsible, resources, and target dates.

On currently installed laptop computers running the Windows XP install image for laptops, some power management functions have been implemented. Users with administrative rights to their laptop have the ability to change those features.



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DIS' plan is to enable group policy options to take advantage of power saving features in Windows 7. While DIS is not planning a mass rollout of Windows 7, the roll out will begin as desktops and laptops are refreshed beginning in 2010. A date and number of minutes for sleep mode to be enabled will be determined with the development of an action plan for this objective.

Objective 2.6.3: Implement virtual server technology or other innovative energy savings computer management actions

See Objective 1.3.1.4 and 1.3.2.4

Strategy 2.7: Paper Usage – establish policies and practices designed to reduce the use of paper, including but not limited to:

Action plans will be developed or expanded, since some already exist for several of these objectives and key indicators, to ensure that identified objectives are further developed with assigned activities, persons responsible, resources, and target dates.

Objective 2.7.1: Reduce internal paper consumption by 25% by 07/01/11

Key Indicators

2.7.1a: Determine baseline paper usage by 12/31/09 – retroactive baseline from 07/01/09

2.7.1b: Set paper output standards by 12/31/09

DIS currently has default printing options set to duplex queues and will work to eliminate non-duplex printers.

2.7.1c: Implement paperless detailed billing delivery by 07/01/10

The DIS billing system has this capability, but more customers need to take advantage of the service. DIS plans to convert to all paperless billing by first quarter FY2011. Customers who desire printed billing will incur a fee for this service. A target date will be determined later via the development of an action plan for this objective.

The following information was sent to customers in the July 2009 DIS Focus customer newsletter:

“In an effort to support the state’s green initiatives, DIS would like to encourage customers to switch to electronic billing. In 2008, DIS began offering paperless billing through DIAMONDS. At that time, an estimated 88,000 pages of bills were printed each month. Since electronic billing was offered, the billing team prints approximately 45,000 pages of bills per month. We would like to see that number significantly decrease again! Through DIAMONDS, you can view your agency’s electronic invoice. You can also view past invoices from October 2006 to today as needed. The web-based system is user friendly, and training on the navigation and use of electronic invoicing is available if you are interested. If you would like to switch your agency to electronic billing, just click on the DIAMONDS button on the home page of the DIS web site. Once you get to the DIAMONDS page, click on the link at the bottom of the page labeled “spreadsheet for



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agency information.” Fill out the requested information and email the sheet to dis.billing@arkansas.gov. Once the billing team receives the information, it will only take a couple of days to make the switch for the customer to electronic billing. You will receive an electronic invoice for the next billing cycle. Please consider the switch to electronic invoicing to support the state in its green efforts. The fewer paper bills that we have to send will reduce our paper, postage, and other costs. If you would like to receive training on electronic invoicing, or if you have questions regarding paperless billing, please contact your Customer Account Representative.”

2.7.1d: Implement electronic administration forms by 07/01/11

For this objective and key indicator, the action plan that will be developed will focus on Human Resources forms, travel forms, and time sheets. DIS administration understands that clearance from Legislative Audit is required for automated forms that do not require a signature. Getting this approval will be the first item in the action plan.

Objective 2.7.2: Phase-out the use of personal on-desk printers

DIS will develop a policy by first quarter FY2011. At the current time, there is no documented policy, only an unwritten practice to not replace printers as the device reaches the end of useful life unless there are special circumstances. A date will be determined with the development of an action plan for this objective.

Objective 2.7.3: Establish multi-user print stations that include printers, copiers, and scanners

DIS has approximately 25 multi-user print stations established. A target date and number will be determined with the development of an action plan for this objective.

Objective 2.7.4: Implement duplexer add-ons to printers which will automatically print dual-side prints of multi-page documents

DIS uses default print queues that are set to duplex for dual-side print of multi-page documents and will work to eliminate non-duplex printers.

Objective 2.7.5: Encourage users to use the setting of typeface fonts and default page margins in word-processed or other agency-printed documents, so as to maximize paper and toner use

Key Indicators:

2.7.5.1: Update online templates to utilize margin and fonts

2.7.5.2: USE TONER SAVING FONTS, SUCH AS THE ECOFONT. THIS IS USING THE SPRANO ECO SANS 10 FONT WHICH USES UP TO 20% LESS INK/TONER.

[HTTP://WWW.ECOFONT.EU/ECOFONTEN.HTML\](http://www.ecofont.eu/ecofonten.html)

Objective 2.7.6: Encourage and require, where appropriate, the use of electronic, "paperless" communication between agency employees, in lieu of printed materials.



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Strategy 2.8: Reducing Non-essential Electricity Usage - establish agency-wide policies designed to reduce "plug load" attributable to the use of non-essential appliances, such as personal coffee makers, toasters, space heaters, refrigerators, microwave ovens, fans, televisions, radios, etc.

DIS will develop a policy to address this strategy by third quarter FY2010 and will support ABA's building rules. Per current ABA policies, space heaters of any type are not allowed. ABA is in the process of adding an addendum to the building rules to address the reduction of electricity usage for non-essential appliances as mentioned above.

A recent inventory of DIS leased space identified the use of 32 small to medium size personal refrigerators in addition to six large ones in the common areas; 20 personal microwaves in addition to six in common areas; 39 personal coffee makers in addition to three large ones in common areas; and numerous other personal items such as toasters, fans, air purifiers, radios, heating pads, electronic picture frames, candle warmers, foot massagers, shredders, decorative lamps, and holiday decorations.

DIS will also support ABA with findings by the Arkansas Insurance Department Risk Management report. Per ABA, current findings applicable to DIS are: remove objects blocking access or sight lines to fire extinguisher and eliminate the use of all light-weight extension cords.

Action plans will be developed for these objectives to ensure that the objective is further developed with assigned activities, persons responsible, resources, and target dates.

Objective 2.8.1: Develop standards for personal appliances

DIS has drafted a policy as per ADEQ's plug load policy. See Appendix 4 for a draft of this policy that is pending review and approval by the DIS Executive Leadership Team.

Each employee is expected to take ownership for the environmental impact of their own work activities to minimize the impact whenever possible.

Objective 2.8.2: Communicate standards through newsletters, employee forums, and broadcast media

The DIS Public Information Coordinator and Change Leader Team will assist with publicizing information via manager meetings and employee forums, DIS LiveWire, DIS HotWire, and training videos.

Strategy 2.9: Training / Culture of energy awareness – establish a training program for agency employees and building Energy Managers in order to ensure better understanding and support of Green Initiatives

Action plans will be developed for these objectives to ensure that the objective is further developed with assigned activities, persons responsible, resources, and target dates.

Objective 2.9.1: Establish a training program in the implementation of low- and no-cost operation and maintenance conservation measures

Objective 2.9.2: Establish a training program for the designated agency supervisory personnel, who will be responsible for monitoring and enforcing energy-efficiency measures within the agency

Objective 2.9.3: Create an Energy Team comprised of representatives from throughout the organization

Completed and described in Section I. A and B

Objective 2.9.4: Create an energy policy to be accepted agency-wide

Completed and described in Section I. C

Objective 2.9.5: Hold regular meetings of the Energy Team to discuss agency-wide integration of energy, financial, and strategic goals

Objective 2.9.6: Hold an informational seminar on energy efficiency (e.g., a “lunch & learn”)

Objective 2.9.7: Send out regular email alerts on energy efficiency measures

Objective 2.9.8: Set lights out and computer shut-down policies for end of day

DIS will follow guidelines and support initiative from ABA regarding lights out settings. Policies to be developed in Strategies 1.4, 2.6. and 2.8 will include computer shut-down policies, desk lighting light out policy, etc.

Objective 2.9.9 Discourage excess driving, encourage carpooling, not driving to lunch, etc.

Strategy 2.10: Central Plant – evaluate central plant for energy conservation opportunities

DIS will follow guidelines and support initiatives from ABA regarding the central plant.

Objective 2.10.1: Complete engineering study for recommendations

Objective 2.10.2: Install air and water side economizers

Objective 2.10.3: Install Variable Frequency Drives (VFD) on pumps

Objective 2.10.4: Install thermal energy storage

Objective 2.10.5: Replace antiquated chiller plant with high efficiency centrifugal model

Objective 2.10.6: Replace single boiler with modular boiler in series

Strategy 2.11: Hot Water System(s) – Evaluate domestic hot water systems for energy conservation measures

DIS will follow guidelines and support initiatives from ABA regarding hot water systems.

Objective 2.11.1: Install timers or integrate with energy management systems

Objective 2.11.2: Insulate tanks

Objective 2.11.3: Install instantaneous water heaters where appropriate

Strategy 2.12: Building Envelope – Evaluate building envelope(s) for energy conservation measures

DIS will follow guidelines and support initiatives from ABA regarding building envelopes.

Objective 2.12.1: Install insulation where needed

Objective 2.12.2: Install storm windows and doors

Strategy 2.13: Water Conservation

DIS will follow guidelines and support initiatives from ABA regarding water conservation.

Objective 2.13.1: Baseline water usage

Objective 2.13.2: Identify water conservation opportunities

Objective 2.13.3: Assess and prioritize opportunities

Objective 2.13.4: Implementation strategies

Objective 2.13.4: Repair leaky faucets

Goal 3: Integrate energy use considerations into maintenance plans

DIS will follow guidelines and support initiatives from ABA regarding energy use in maintenance plans.

Strategy 3.1: Enhance preventative and routine maintenance procedures to maximize energy efficiency

Objective 3.1.1: Perform filter changes for HVAC systems at regular intervals

Objective 3.1.2: Perform regular inspections for pneumatic leaks

Objective 3.1.3: Recommission high energy use equipment

Strategy 3.2: Integrate energy considerations into cleaning / janitorial activities

Objective 3.2.1: Evaluate need for / frequency of various cleaning activities

Objective 3.2.2: Utilize cleaning products that reduce energy and water consumption

Objective 3.2.3: Schedule custodial functions closer to operational hours

Strategy 3.3: Evaluate high efficiency replacements of all equipment

Objective 3.3.1: Replace all failed motors with premium efficiency ones

Objective 3.3.2: Replace all failing appliances with ENERGY STAR as minimum standard

Goal 4: Integrate energy use considerations into capital improvement plans

DIS will follow guidelines and support initiatives from ABA regarding capital improvement plans.

Should DIS enter into a capital improvement plan, i.e. a new State Data Center, the design will comply with Act 1494.

Strategy 4.1: Incorporate energy efficiency considerations into procurement of equipment

Objective 4.1.1: Change from lowest-bid approach to life-cycle cost approach when purchasing equipment

Strategy 4.2: Incorporate energy efficiency considerations into new construction or renovation projects

Objective 4.2.1: Build to high efficiency standards as per legislation, Act 1494

Objective 4.2.2: Provide details on all new construction projects that will be started in the next year and note if life-cycle cost analysis was used to reduce water, energy, and other utilities, in compliance with Act 1494

Objective 4.2.3: Provide details on all major renovation projects that will be started in the next year and plans to comply with Act 1494.

Objective 4.2.4: Provide details on all planned purchases of constructed or renovated buildings in the next year and plan to comply with Act 1494.

Objective 4.2.5: Provide details on agency's use of life-cycle cost analysis in projects implemented or planned to reduce water, energy, and other utilities.

Strategy 4.3: Water systems in new construction projects shall be designed and constructed to use at least 20% less potable water as per Act 1494.

Goal 5: Promote StEP timeline

Strategy 5.1: Develop a timeline for implementation of the StEP that is within a realistic time frame

Objective 5.1.1: A Work Breakdown Structure (WBS) developed via Microsoft Project is attached as appendix 5 of this plan. DIS will meet the required reporting requirements by October 31, 2009 and April 1, 2010. Energy use data for the data center and warehouse facilities will be maintained and reported as required each year through FY 2017. As action plans are developed, the WBS will be updated.



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Appendix 1

Environmentally Preferable Purchasing Guidelines **Arkansas Department of Information Systems**

1.0 Statement of Policy

It is the policy of the Arkansas Department of Information Systems to:

Purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practical, and

Purchase products that include recycled content, are durable and long-lasting, conserve energy and water, reduce greenhouse gas emissions, are mercury-free, and lead-free, use agricultural fibers and residues, and use wood from sustainably harvested forests.

2.0 Purpose

This policy is adopted in order to:

- conserve natural resources,
- minimize environmental impacts such as pollution and energy use,
- eliminate or reduce toxics that create hazards to workers and the community,
- support strong recycling markets,
- reduce the volume of materials that are land filled,
- increase the use and availability of environmentally preferable products that protect the environment,
- identify environmentally preferable products and distribution systems,
- reward manufacturers and vendors that reduce environmental impacts in production and distribution systems and,
- create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

3.0 Specifications

3.1 Source Reduction

3.1.1 The Arkansas Department of Information Systems shall institute practices that reduce waste and result in the purchase of fewer products whenever practical and cost-effective, without reducing safety or workplace quality, including but not limited to:

- using electronic communication instead of printed,
- using double-sided photocopying and printing,
- streamlining and computerizing forms,
- using “on-demand” printing of documents and reports as they are needed,
- sharing equipment and occasional use items,
- reusing products such as but not limited to: file folders, storage boxes, office supplies, and furnishings
- choosing durable products rather than disposable,
- buying in bulk when storage and operations exist to support it

3.1.2 DIS shall purchase remanufactured products such as laser toner cartridges, tires, furniture, and equipment whenever practical, but without reducing safety, quality or effectiveness.



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3.1.3 DIS shall require all equipment bought after the adoption of this policy to be compatible with source reduction goals and practices when practical, including but not limited to:

- Copiers and printers capable of duplexing
- Scanners
- Bulk storage and operation.

3.1.4 All Purchasers/Buyers shall evaluate short-term and long-term costs in comparing product alternatives, when feasible. This includes consideration of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives. Examples of products for which such cost comparisons can indicate significant differences between short and long-term costs include, but are not limited to office furniture, office equipment, and vehicles.

3.1.5 Products that are durable, long lasting, reusable or refillable are preferred whenever feasible.

3.2 Recycled Content Products

3.2.1 Printing paper, office paper, and paper products shall contain the highest postconsumer content practical, but no less than the minimum recycled content standards established by the United States Environmental Protection Agency (U.S. EPA) Guidelines (see Definitions).

3.2.2 Janitorial paper products shall contain the highest postconsumer content practical, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

3.2.3 Other products for which the U.S. EPA has established minimum recycled content standard guidelines, such as those for, transportation, vehicles, and non-paper office products, shall contain the highest postconsumer content practical, or, when postconsumer material is impractical for a specific type of product, contain substantial amounts of recovered material, but no less than the minimum established by the U.S. EPA Guidelines.

3.4.4 DIS shall purchase products and equipment with no lead or mercury whenever possible, including automotive vehicles. For products that contain lead or mercury, DIS shall give preference to those products with lower quantities of these metals and to vendors with established lead and mercury recovery programs.

3.4.5 All applicable computer and network equipment, currently, desktop, laptop, portable, and notebook PCs intended for individual use, and computer monitors purchased by DIS are required to have achieved a Bronze registration or higher under the Electronic Products Environmental Assessment Tool (EPEAT). As other types of PC equipment become available under the EPEAT system from manufacturers participating in state computer procurement contracts, the equipment will be included in the list of products which must meet the Bronze ranking to be purchased. Additional consideration will be provided for products that have achieved EPEAT Silver or EPEAT Gold registration. The registration criteria and a list of all registered equipment are provided at www.epeat.net.

3.4.6 End-of-life vehicles will be replaced with less polluting alternatives such as hybrids, vehicles that can run on bio-based fuels or electric batteries, and best available technology, when practical.

3.3 Energy

3.3.1 Where applicable, energy-efficient equipment shall be purchased with the most up-to-date energy efficiency functions. When necessary, suppliers or manufacturers shall train equipment operators and



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maintenance personnel in the proper enabling and use of energy efficient and sleep mode functions on their equipment.

3.3.2 All appliances purchased by DIS and for which the U.S. EPA ENERGY STAR certification is available shall meet ENERGY STAR certification. Typically, this would include exhaust fans, water heaters, computers, printers, exit signs, water coolers and appliances such as refrigerators, dishwashers and microwave ovens. This also applies to leased appliances such as coffee stations.

3.3.3 When ENERGY STAR labels are not available, energy efficient products that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program will be chosen.

3.4 Green Building – Construction and Renovations

3.4.1 All building and renovations undertaken by DIS shall follow green building practices for design, construction, and operation.

3.4.2 All newly constructed buildings owned or leased by DIS shall incorporate sufficient green building methods and techniques to qualify for the equivalent of a Leadership in Energy and Environmental Design (LEED™) or Green Globes™ rating system certification (see Section 4.0 Definitions).

3.4.3 Renovation of buildings owned or leased by DIS shall achieve as many prerequisites and credits as feasible as described in the LEED™ and/or Green Globes™ rating systems for Existing Buildings and any subsequent version adopted (see Section 4.0 Definitions).

3.4.4 DIS shall encourage agencies, vendors, and other members of the community, including architects, builders and contractors, to use green building methods and practices in Arkansas and to achieve standards set by the LEED™ and/or Green Globes™ rating systems.

3.5 Waste Minimization

3.5.1 DIS encourages vendors to eliminate packaging or use the minimum amount necessary for product protection, to the greatest extent practical.

3.5.2 Packaging that is reusable, recyclable, or compostable is preferred, when suitable uses and programs exist.

3.5.3 Vendors shall be encouraged to take back and reuse pallets and packaging materials.

3.5.4 Suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be encouraged to offer a take back option for equipment for reuse or environmentally safe recycling.

3.6 Landscaping

3.6.1 Workers and contractors providing landscaping services for DIS properties, including those that are owned or leased, shall employ sustainable landscape management practices, whenever possible, including:

- The use of integrated pest management, including minimal pesticide use, is required at properties owned by DIS and encouraged for leased properties.
- Grass cycling (leaving the clippings on the lawn) is required for at least 50% of all mowing.
- Pruning shall be done on an as needed basis. Thinning is the preferred method of pruning. Minimal heading or shearing is encouraged.



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- Fertilizing should be done on an as needed basis, as indicated by a soil analysis. Slow release and/or organic fertilizers are preferred.
- Irrigation scheduling based on weather or an as needed basis is required whenever possible. Drip irrigation is preferred whenever practical.
- Turf areas where drip irrigation is not appropriate should be limited to walking and recreation surfaces. All other landscaping, such as for views, should be accomplished with low-water plantings.
- Recycling of plant debris by composting and/or maintaining a minimum two-inch layer of mulch under trees, shrubs and groundcovers and a minimum three-inch layer in all open areas is strongly encouraged. Allowing leaf drop to become a part of the mulch layer in tree, shrub and groundcover areas is preferred.

3.6.2 Plants should be selected to minimize waste by choosing species that are appropriate to the microclimate, species that can grow to natural size in the space allotted and perennials rather than annuals for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.

3.6.3 Hardscapes and landscape structures constructed of recycled content materials are encouraged. Concrete substitutes are encouraged for walkways.

3.6.4 Because of the greater polluting characteristics of two-stroke engines, powered by an oil-and-gas mixture, compared to four-stroke engines, all contracts for grounds keeping should contain a provision to discourage the use of two-stroke engines and encourage the use of four-stroke, electric or alternative fuel engines such as propane or biodiesel. Manual equipment and tools are also encouraged. Further, a provision should be included in these contracts that retains the right of DIS to disallow the use of two-stroke engines should the grounds covered by the contract become part of a nonattainment area. A sample provision follows:

“Because of the greater pollution produced by two-stroke engines, which use an oil-and-gas mixture for fuel, compared to four-stroke, electric and alternative fuel engines such as propane and biodiesel, the use of two-stroke engines by the successful bidder is discouraged and the use of four-stroke, electric or alternative fuel engines is encouraged. Manual equipment and tools are also encouraged. Special consideration will be given to those bidders who certify that they will use four-stroke, electric or alternative fuel engines rather than two-stroke engines. If the grounds that will be maintained under this contract become part of a nonattainment area based on air quality, DIS reserves the right to disallow the use of two-stroke engines by groundskeepers on its property; therefore, the successful bidder must be capable of performing all duties without the use of two-stroke engines.”

3.7 Agricultural Bio-Based Products

3.7.1 Vehicle fuels made from rapidly renewable plant-based contents such as vegetable oils are encouraged whenever practical.

3.7.2 Paper, paper products and construction products made from rapidly renewable plant-based contents such as agricultural crops and residues are encouraged whenever practical.

4.0 Definitions

4.1 “Agricultural Bio-Based Products” means commercial or industrial products, other than food or feed, which utilize agricultural crops or residues but does not include products made from forestry materials.

4.2 “Buyer” means anyone authorized to purchase on behalf of this jurisdiction or its subdivisions.



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4.3 The “Canadian Standards Association” (CSA) is a not-for-profit membership-based association serving business, industry, government and consumers in Canada and the global marketplace. The CSA works to develop standards that address needs, such as helping to preserve the environment, enhancing quality of life, advancing public safety and health and facilitating trade (<http://www.csa.ca>).

4.4 “Chlorine free” means products processed without chlorine or chlorine derivatives.

4.5 “Contractor” means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with DIS or serves in a subcontracting capacity with an entity having a contract with DIS for the provision of goods or services.

4.6 “Dioxins and furans” are a group of chemical compounds that are classified as persistent, bio-accumulative, and toxic by the Environmental Protection Agency.

4.7 “ENERGY STAR” means the U.S. EPA’s energy efficiency product labeling program described at <http://www.energystar.gov>.

4.8 “Energy Efficient Product” means a product that is in the upper 25% of energy efficiency for all similar products, or that is at least 10% more efficient than the minimum level that meets federal standards.

4.9 “Electronic Products Environmental Assessment Tool (EPEAT)” is a procurement tool designed to help institutional purchasers evaluate, compare, and select desktop computers, laptops, and monitors based upon their environmental attributes as specified in the consensus-based IEEE Standard for the Environmental Assessment of Personal Computer Products (1680). More information on EPEAT is available at <http://epeat.net>.

4.10 “Green Globes™” is an online building and management environmental audit tool that helps building designers, property owners, and managers measure the environmental performance of buildings against best practices in areas such as energy, water, hazardous materials, waste management and indoor environment. Green Globes™ is a rating system for green buildings that is similar to the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED™) rating system. More information is available at <http://www.greenglobes.com>.

4.11 “Green Seal” is an independent non-profit organization dedicated to safeguarding the environment and transforming the marketplace by promoting the manufacture, purchase, and use of environmentally responsible products and services (www.greenseal.org).

4.12 “Integrated Pest Management” or (IPM) is a pest control system that uses a combination of four techniques designed to prevent, eliminate or suppress pests to minimize the use of potentially hazardous chemical and biological contaminants. The four control methods are: cultural controls; mechanical/physical controls; chemical controls; and organic controls.

4.13 “Leadership in Energy and Environmental Design (LEED™) Rating System” means the self-assessing system developed by the U.S. Green Building Council designed for rating new and existing commercial, institutional, and high-rise residential buildings. Credits are earned for satisfying defined criteria and standards. Different levels of green building certification are awarded based on the total credits earned. The LEED™ Green Building Rating System is described at <http://www.usgbc.org>.

4.14 The “Organic Trade Association” (OTA) is a membership-based business association that focuses on the organic business community in North America. OTA’s mission is to promote and protect the growth of organic trade to benefit the environment, farmers, the public and the economy (<http://www.ota.com>).



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4.15 “Postconsumer Material” means a finished material which would normally be disposed of as a solid waste, having reached its intended end-use and completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

4.16 “Practical” means whenever possible and compatible with state and federal law, without reducing safety, quality, or effectiveness.

4.17 “Preconsumer Material” means material or by-products generated after the manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.

4.18 “Processed Chlorine Free” (PCF) refers to a recycled product in which the recycled and virgin content of the product is produced using no chlorine or chlorine derivatives.

4.19 “Recovered Material” means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes pre-consumer and postconsumer material but does not include excess resources of the manufacturing process.

4.20 “Recycled Content” means the percentage of recovered material, including pre-consumer and postconsumer materials, in a product.

4.21 “Recycled Content Standard” means the minimum level of recovered material and/or postconsumer material necessary for products to qualify as “recycled products.”

4.22 “Recycled Product” means a product that meets DIS’s recycled content policy objectives for postconsumer and recovered material.

4.23 “Remanufactured Product” means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

4.24 “Reused Product” means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

4.25 “SEER” stands for “seasonal energy efficiency ratio.” Air conditioning units are assigned an efficiency rating that is known as its SEER. The SEER is defined as the total cooling output (in British thermal units or Btu) provided by the unit during its normal annual usage period divided by its total energy input (in watt-hours) during the same period. The SEER 13 rating is an energy efficiency standard that is governed by the U.S. Department of Energy.

4.26 “Source Reduction” refers to products that result in a net reduction in the generation of waste compared to their previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

4.27 The “Toxics Release Inventory” (TRI) is a publicly available U.S. EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. It includes chemicals that are classified as carcinogens under the requirements of the Occupational Safety and Health Administration (OSHA) Lists can be obtained from <http://epa.gov/tri/chemical/index.htm>.



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4.28 "U.S. EPA Guidelines" means the Comprehensive Procurement Guidelines established by the U.S. Environmental Protection Agency for federal agency purchases as of May 2002 and described at <http://www.epa.gov/epaoswer/non-hw/procure/products.htm>, or as updated.

4.29 "Water-Saving Products" are those that are in the upper 25% of water conservation for all similar products, or at least 10% more water-conserving than the minimum level that meets federal standards.

5.0 Priorities

5.1 The health and safety of workers, citizens, and DIS employees is of the utmost importance and takes precedence over all other policies.

5.2 DIS developed a successful internal recycling system and recognizes that recycled content products are essential to the continuing viability of a sustainable market.

5.3 Nothing contained in this policy shall be construed as requiring a division or contractor to procure products that do not perform adequately for the intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

5.4 Nothing contained in this policy shall be construed as requiring DIS or a contractor to take any action that conflict with state or federal requirements.

6.0 Implementation

6.1 This policy shall be implemented through the development of an advisory committee or Green Purchasing Team consisting of members representing all of the agency's divisions. The team's responsibilities shall include, but are not limited to:

- Evaluating opportunities for substituting environmentally preferable products,
- Designing and implementing programs and processes for increasing the purchase of environmentally preferable products,
- Ensuring that purchasing documents, specifications, and contracting procedures do not contradict each other and do not deter or inhibit the purchase of environmentally preferable products.
- Providing information to facilitate the evaluation and purchase of environmentally preferable products, including identifying appropriate products and sources and providing technical assistance
- Evaluating obstacles to purchasing such products in order to create solutions
- Educating division chiefs, section managers, purchasing liaisons and employees about DIS's Environmentally Preferable Purchasing Policy.

6.2 In compliance with state law, vendors shall be required to specify the minimum or actual percentage of recovered and postconsumer material in products, even when such percentages are zero.

6.3 Vendors and successful bidders shall verify environmentally preferable purchasing claims by certifying, under penalty of perjury, that the environmental attributes claimed are accurate. Such verification shall be accomplished by supplying signed verification from either a recognized certifying organization or the manufacturer, or by identifying claim verification on the product, such as the ENERGY STAR symbol. This requirement for certification applies to products for which the vendor or successful bidder claims such attributes as apply to the product, including, but not limited to, recycled content, non-toxic, chlorine-free, reduced toxicity, sustainable forestry, and energy-saving features.



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6.4 Buyers making the selection shall provide a written explanation for product choices that do not meet the environmentally preferable purchasing criteria in this policy. Such written explanations shall be filed with the DIS Purchasing Agent within 15 days of making the product choice (see Procurement Determination Form).



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Procurement Determination Form

Item: _____

This item is required to meet Environmentally Preferable Purchasing guidelines as described in DIS's policy.

___ I have considered the Environmentally Preferable Purchasing guidelines and searched for product or service options that meet them.

___ Compliance with DIS's guidelines was not attainable for this purchase because:

___ Item is not available within a reasonable period of time.
(Need date: _____ Date available: _____)

___ Item fails to meet a performance standard in the specifications.
Specifically, _____

___ Item is not available, or is not available from 2 or more sources.

Market research was performed by calling _____ (insert number) vendors, but only _____ was able to supply the item.

___ Item was only available at an unreasonable price (i.e., EPP item cost more than non-compliant item).

Price of EPP item: _____

Price of non-compliant item: _____

___ Compliance would conflict with state or federal law requiring that: _____

Signature of Purchaser Printed Name of Purchaser Date



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Appendix 2

Shredding and Recycling Procedure

Arkansas Department of Information Systems

Required Outcome(s):

- The secure disposal of waste paper created from official DIS business.
- The responsible disposal and recycling of waste paper not created from official DIS business.

Procedure:

1. What goes where?
 - a) **All waste paper with official DIS business information on it goes in locked shred containers.** This may be from printers, copiers, fax machines, and hand written notes. See details below.
 - b) All waste paper that does not contain official DIS work product on it into a recycling container located in various locations throughout the office. This includes all other paper products that do not contain sensitive information or have food residue. Examples include all types of paper, soft-bound books, brown paper bags, newspapers, junk mail (including window envelopes), cardboard, catalogs, magazines, phone books, paper ream wrappers. See details below.
 - c) What goes in ordinary trash? Containers of any kind with food residue, plastic wrapping, hardback books
2. Recycling details:
 - Staples do not have to be removed, but you must remove paper clips and binder clips
 - If you have trouble locating a reasonably convenient container, see your manager for help.
 - If your container is full, you can empty it (or find a willing volunteer) by taking it to the first floor loading dock and emptying the contents into the recycle dumpster.
 - If your container not large enough, contact the DIS Recycling Coordinator. A larger size maybe available.
 - Members of the recycling team should periodically check the paper recycle bins to ensure proper use
 - Ideally members of the recycling team will be responsible for ensuring the paper recycle bins are emptied as need. They can rotate the task with staff that uses the bins.
3. Shredding details:
 - a) Shred containers are located around the department.



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- If you have trouble locating a reasonably convenient container, see your manager for help.
 - If your container is full, wheel it to DIS Operations Paper Storage Room and exchange it for a replacement.
 - If your container not large enough contact Computer Operations, there are two sizes, we will work with the vendor to get the right size for your area. The containers are interchangeable, so don't worry about which one you have.
- b) The shredder vendor does not require the removal of fasteners such as staples, paper clips and paper clamps. Of course clips and clamps should be removed for reuse.
- c) If you have computer media (tapes, cd's, fiche, etc.) for disposal, please bring it to Computer Operations. They will put it in a separate container destined for the vendor's super-duty shredder.
- d) To handle items that are too large to fit into the locked bins, call Computer Operations at 682-4905 between 9 a.m. and 4:30 p.m. and arrangements will be made to bring the items to the paper storage area.
- e) To help with notification and to perform a monthly test of the overhead pager, the DIS receptionist will broadcast this message when the shred vendor is here and is ready to empty:
- “Attention DIS, attention DIS, the shredder vendor has arrived to empty the shred containers. Please bring the shred containers from all areas to the hallway for immediate emptying. Repeat, the shredder vendor has arrived to empty the shred containers. Please bring the shred containers from all areas to the hallway for immediate emptying. This is also a test of the overhead paging system. If you have any trouble hearing this message, please report it to the DIS receptionist. Thank you.”
- f) Upon this announcement of when the shredder vendor has arrived, managers and staff in all work areas see that shred containers are wheeled to the hallway and then recovered as soon as they are emptied. Good safety practice prohibits us from leaving shred containers sitting for long periods in the hallways.
- g) The Shredder Vendor will unlock the containers containing the materials for shredding. It is up to the employees retrieving containers to ensure that the containers are locked before they are put back in place to receive shredding materials.
- h) If something is dropped into a locked container accidentally, see the Data Center Team Lead. Having keys around affects the security of the containers so please be careful and request this only if absolutely necessary.

Controls and Measures:

- The DIS receptionist will broadcast on the overhead pager when the shred vendor is here.

Responsibility/Assignment:

- All DIS Employees are responsible for



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- a) Putting waste in the correct containers.
 - b) Wheeling shred containers to the hallway, returning them as soon as they are emptied and assuring they are locked.
- Computer Operations is responsible for
 - a) Assistance with shred bins
 - b) Computer media disposal
 - c) Assistance with large items
 - DIS Receptionist is responsible for
 - a) Notification via the overhead pager when the shred vendor is here.
 - There is a DIS recycling team that nominates a Recycling Coordinator
 - b) Members of the recycling team should periodically check the paper recycle bins to ensure proper use
 - c) Ideally members of the recycling team will be responsible for ensuring the paper recycle bins are emptied as need. They can rotate the task with staff that uses the bins.

Appendix 3

ESM - Server Decommission

Arkansas Department of Information Systems

1. Required Outcome(s):

When this procedure is followed successfully:

- A server from the computer floor at DIS is removed and sent to M&R
- All of the supporting hardware and software are removed or handled appropriately
- The Fiscal, Network and Operations Teams are informed of the change

2. Procedure:

Unless otherwise noted, ESM (UNIX/Windows Support Teams) will perform the following steps:

- Determine application viability with customer.
- Remove server from backup schedules.
- Determine retention policy with customer.
- Shutdown all applications, databases, and/or services.
- Disable all scripts, cron/at jobs, and any other scheduled jobs.
- Remove/release all product license keys.
- Modify the DASD/Tape billing scripts on FTP/TSM servers.
- Inform Fiscal of the change in CPU counts for billing purposes.
- Identify and remove all SAN resources being used on the server.
- Release storage resources (LUNs) on the Shark(s).
- Identify the ports used on the SAN switches via WWPN.
- Remove alias definitions and zoning information on the SAN fabric(s).
- Remove Volume Group entries from SAN storage devices (DS8300, Shark, etc).
- Unplug fiber cabling from SAN switch, if necessary.
- Remove server entries in monitoring software (SPONG, Nagios, SCOM, etc).



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- Identify the VLAN/subnet and MAC address of all configured network interfaces.
- Inform the Network Team of the VLAN/MAC address information so they can identify/release the switch ports.
- Prepare internal hard drives IAW established procedures.
- Remove fiber and Ethernet cabling from machine, and remove from subflooring.
- Remove power cables from PDU(s).
- Identify the breakers the unneeded PDUs are connected to, and give that information to Operations to reallocate power.
- Give fiscal CS & AASIS Tag numbers.
- Fiscal will schedule M&R pickup and update inventory.

3. Controls and Measures:

- Periodic reviews of applications will be accomplished. This control will identify servers that need to be decommissioned.
- Yearly reviews of maintenance costs will be accomplished. This control will identify which servers need to be replaced.

4. Responsibility/Assignment:

ESM is responsible for all steps above except the following:

- Fiscal will:
 - 4..1. Schedule M&R pickup.
 - 4..2. Remove equipment from inventory.
- Customer will:
 - 4..1. Determine Application viability with Unix/Windows Support.
 - 4..2. Determine retention policy with Unix/Windows Support.
- Network will:
 - 4..1. Remove the specified switch ports from the VLANs.

5. Flowchart: N/A



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Appendix 4

Plug-Load Policy

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DRAFT VERSION – this policy has not been approved as of 10/31/2009

Energy codes and green building initiatives are only beginning to address control of the growing electrical demand of plug loads. Many plug in products continue to consume energy even when turned off, such as a cell phone charger left plugged into a wall receptacle continues to consume energy even when the cell phone is disconnected. Plug loads or “phantom” loads are so prevalent in today’s buildings that the loads can account for as much as 15% of a home’s total energy consumption and 9% of commercial buildings total energy consumption just through plug in devices.

The plug load, which includes appliances such as coffee makers, toasters, space heaters, copiers, faxes, computers, monitors, refrigerators, lamps, decorations, fans, collectibles, televisions, DVD/VCR players, etc., is significant. It is the single largest opportunity to cut energy costs with no capital investment. These devices individually are almost negligible in terms of power consumed, but together they add up to tens of thousands of dollars in energy costs. Plug load represents a two-fold burden. First, the electric power plug loads directly consume, and second, the additional cooling load on HVAC equipment.

The Arkansas Insurance Department, Risk Management Division, Facility Safety Inspections has addressed issues that not only affect energy usage, but also involve safety issues in state owned and leased buildings. Past inspections in MAC revealed many plug-load issues that must be addressed, including:

- Inappropriate use of extensions
- Absence of surge protectors
- Prohibited use of fans and space heaters
- Electrical cords in disrepair and/or inadequate grounding
- Toaster ovens in tenant spaces (only allowed in employee break rooms)
- Toaster ovens plugged in extension cords
- Coffee pots in tenant spaces
- Refrigerators in tenant spaces

Plug load control is an integral part of a comprehensive energy management strategy. The U.S. Department of Energy estimates that office plug load represents 26% of energy use in commercial offices. In keeping with tenant safety, the energy code and green building initiatives, DIS will adopt this plug-load policy. We must lead by example and ensure that we provide a safe working environment, while conserving energy for the future. All small appliances personal coffee pots, personal toaster ovens, fans, space heaters, small refrigerators and any personal plug-load appliances will not be authorized in the building. Further inspections will be conducted periodically.



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Appendix 5

DIS StEP Timeline and Work Breakdown Structure

10/1/2009 to 12/30/13

WBS	TASK NAME	START	FINISH	NOTES
1	StEP drafted & submitted by 10/31/09	10/1/09	10/30/09	Kick off
1.1	Energy Team information compiled	10/1/09	10/21/09	Debbie Martin, due 10/16/09 complete
1.2	Policy statement developed	10/1/09	10/21/09	Jeff Dean, due 10/16/09 Jeff complete
1.3	Facility/Site Description information completed	10/1/09	10/21/09	Debbie Martin, Rick Martin, and Timothy Bales, Complete
1.4	Collect and review lease agreements for the MAC bldg, Warehouse, and network space at UAPB and U of A Fayetteville	10/1/09	10/21/09	Fiscal - Lou Ann Elmore's team will collect and provide this information Complete
1.5	Develop work breakdown structure	10/16/09	10/30/09	John Benjamin developed work breakdown structure/ schedule for project and will be updated as needed Complete
2	Reduce the agency's annual maintenance and operating budget devoted to energy consumption	10/1/09	12/31/13	20% reduction by 2014
2.1	Collect annual energy usage data for facilities	10/1/09	6/30/13	
2.2	Collect annual energy usage data for vehicle fleet	10/1/09	6/30/13	(DIS is in the process of calculating the MPG information and will complete it at a later date.)
2.3	Reduce power consumption in the data center	10/1/09	6/30/13	
2.4	Reduce power consumption in the office and support areas	10/1/09	6/30/13	Work with Dan and Judy to develop this.
3	Reduce the environmental impact of the agency's overall operation	10/1/09	6/30/13	
3.1	Develop new or revise existing standards and criteria for purchasing materials, products or services	10/1/09	10/22/09	10/23 – stmt. Provided by Kevin; 10/22 Dan provided info from his study
3.2	Fuel-efficient Fleet	10/1/09	10/30/09	Choose a vehicle that fits the job: Combine trips when possible; Ride share ; : Reduce idling of vehicle.
3.3	Recycling Program	10/1/09	10/21/09	



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3.4	Lighting Systems	10/1/09	6/30/13	DIS will follow guidelines from our Lessor, Arkansas Building Authority and support their initiatives in this area.
3.5	Heating, Ventilation, and Air Conditioning Systems	10/1/09	6/30/13	
3.6	Computer Equipment	10/1/09	6/30/13	
3.7	Paper Usage	10/1/09	7/1/11	10/18/09 Policy updated & published - pending communication
3.8	Reducing Non-essential Electricity Usage	10/1/09	12/31/09	Leadership Class three project
3.9	Training / Culture of energy awareness	10/1/09	12/31/09	Leadership Class three project
3.10	Evaluate domestic hot water systems(s) for energy conservation measures	10/1/09	6/30/13	
3.11	Evaluate building envelope(s) for energy conservation measures	10/1/09	6/30/13	DIS will follow guidelines from our Lessor, Arkansas Building Authority and support their initiatives in this area.
3.12	Water Conservation	10/1/09	6/30/13	
4	Integrate energy use considerations into maintenance plans	10/1/09	6/30/13	Should DIS enter into a capital improvement plan, i.e. new State Data Center, the design will comply with Act 1494.
4.1	Enhance preventative and routine maintenance procedures to maximize energy efficiency	10/1/09	6/30/13	
4.2	Integrate energy considerations into cleaning / janitorial activities	10/1/09	6/30/13	
4.3	Evaluate high efficiency replacements of all equipment	10/1/09	6/30/13	
5	Integrate energy use considerations into capital improvement plans	10/1/09	6/30/13	
5.1	Incorporate energy efficiency considerations into procurement of equipment	10/1/09	6/30/13	
5.2	Incorporate energy efficiency considerations into new construction or renovation projects	10/1/09	6/30/13	
6	Promote StEP timeline	10/1/09	10/30/09	
6.1	Develop a timeline for implementation of the StEP that is within a realistic time frame	10/1/09	10/30/09	DIS will meet the required reporting requirements by October 31, 2009 and April 1, 2010