



**Guideline for Developing Facility Specific
Energy/Resource Management Plans in Lee County
Owned or Leased Properties**

INTRODUCTION

In the recent past, management of energy and other resources was commonly relegated to a secondary consideration falling behind almost every aspect of a facility's operations. The significance of energy/resource consumption was too often considered a cost of "doing business" and simply dismissed because it was viewed as a responsibility outside the considerations of most of the occupants and customers in buildings owned or operated by Lee County. However, with rapidly increasing prices and a new awareness of our decreasing resources coupled with environmental impact, energy/resource consumption must now be considered by both operators and occupants as manageable quantities. In today's global environment, all responsible parties must work together to insure that we are using increasingly scarce and costly resources in the most environmentally and fiscally responsible manner possible.

Unfortunately, past experience indicates that resorting to crisis management techniques such as directives or policies about energy/resource use generates only short-lived improvements. Lasting improvements in energy/resource management can be achieved only when there is a developed long term site or area specific strategy with input from operators and occupants of that space. The steps outlined in this document form a framework for developing a building or area specific Energy/Resource Management Plan. The guideline as written is believed to be a reasonable and practical approach to improving energy/resource management in our facilities, lowering costs and becoming more active stewards of our environment.

This document will establish the order and action steps needed to provide Lee County and our building occupants with a consistent roadmap to take a more active role in our future resource use. Any well thought out management plan, including those for energy, water and other resources, only serve as a framework for identifying opportunities and problem-solving mechanisms which can be implemented by the involved parties in many site specific ways, depending on each groups particular activities and needs. It is important to realize that our buildings and facilities serve a multitude of purposes and the operation of each must be considered unique. For example, the energy/resource needs for the Downtown Jail will not be the same as a regional library. To summarize, each

building and even some areas of a multi-use building will need to select those operational aspects of this guide which suit their own specific needs in developing their own plan.

However, no matter how diverse our buildings and their functions are, common elements exist and therefore this guide in general is expected to be used in developing any plan. In the development of a plan, personnel, both facilities staff and occupants must work together to evaluate the processes and procedures that apply to a particular building or area. Once agreed to by all involved parties, the site specific plan for a facility will manage energy/resource issues by incorporating strong operational controls through assigning individual and group responsibilities. The plan will also set measurable objectives and targets for managing energy and other identified resources. It will provide a means to monitor and measure energy/resource performance indicators and evaluate progress in all phases of energy/resource management while providing feedback to the occupants.

The primary goal for all plans County-wide is to use energy and other resources during the daily operation of a building or facility, in the most efficient and responsible manner.

The general purpose of this guide is to familiarize and provide assistance to building occupants in developing and implementing a plan consistent with Lee County administration's goal of taking a more proactive stance with regard to resources used. Direct benefits resulting from implementation of this plan will include positive environmental impact through the responsible use of all resources associated with the operation of Lee County facilities. Indirect benefits include higher employee morale, increased safety/health, and recognition as a good role model for both staff and citizens. Finally, the plan once developed following this guide will be consistent with the United States Green Building Council as well as the Federal Government, Energy Star guidelines and other environmental organizations.

Why Develop a Plan?

Thirty percent of all the worlds energy is currently used in the United States. Forty percent of all energy expended in the United States is used in office buildings. Effective energy/resource management yields concrete resource and cost savings for the direct benefit of the citizens of Lee County. Reduction in the use of limited fossil fuel and other resources provides additional benefit to not only Lee County but the nation. Process and behavioral changes from targeted energy/resource management projects county-wide will result in reduced needs for other raw materials, thus reducing waste and disposal requirements.

1.0 SCOPE

This document is intended as a guide for developing a plan consistent with the desires of Lee County Administration to become more environmentally responsible. This document is intended for any organization in Lee County owned or leased facilities that uses energy, water, or other resources, and desires to develop a Plan for the responsible use of energy and resources during the conduct of their work.

2.0 DEFINITIONS

For consistency the following definitions may be used as needed when developing a plan.

Administration: The Board of Lee County Commissioners or Top Management of Lee County including the County Manager and Public Works Director.

Carbon Footprint: A measure of the impact human activities have on the environment in terms of the amount of green house gases produced, measured in units of carbon dioxide.

Chairperson: The person from the lead organization who directs the team in developing and implementing the Plan.

Commissioning: Process of ensuring that a new building or energy system is designed, installed, functionally tested, and capable of being operated and maintained according to the owner's operational needs.

Continuous Commissioning: Process where a facility, an energy system, or a piece of equipment is continuously monitored, measured, analyzed and optimized to improve performance and energy efficiency.

Energy: Primary or secondary resources that are purchased, stored, disposed, and used by equipment and processes during the normal daily function of a facility.

Energy/Resource Baseline: Initial overview of the organization's energy/resource system, including facts and calculations related to energy use, organizational output, key performance indicators, and financial information.

NOTE: *Used as the starting point for tracking continual improvement.*

Energy/Resource Profile: Regularly updated overview of the organization's energy status, including utility tracking, significant energy uses, and key performance indicators.

Energy/Resource Management Project: Course of action, with a definite beginning and end, used by the organization to achieve energy goals and targets.

Energy Star: A voluntary labeling program of the US Environmental Protection Agency (EPA) and the US Department of Energy that identifies energy efficient products. Qualified products exceed minimum federal standards for energy consumption by a certain amount, or where no federal standards exist, have certain energy saving features. Such products may display the Energy Star label.

Energy System: Any logical equipment grouping which uses and/or produces primary or secondary energy resources.

Energy/resource coordinator: People assigned by the Team to monitor the implementation of the plan once in place and report on the effectiveness of the plan at scheduled meetings.

Environmental Protection Agency (EPA): A federal agency created in 1970 to permit coordinated and effective governmental action, for protection of the environment by the systematic abatement and control of pollution, through integration of research monitoring, standard setting, and enforcement activities.

Facilities Management: The Lee County Division responsible for the operation and maintenance of all County owned or leased properties.

Goal: Ends toward which effort is directed to achieve the Plan.

Green Products: Products used to promote GREEN (ecological and environmental) initiatives.

Key Performance Indicator (KPI): Index that relates energy use or cost to organizational output.

NOTE: Examples include Btu/ft²; Btu/piece; energy cost/item; energy cost/mile; Btu/patient; energy cost/room.

Leadership in Energy and Environmental Design (LEED): A United States Green Building Council rating system which sets standards based upon resource usage of buildings and facilities.

Manager of Energy Conservation/Green Building Initiatives: Technical representative from Facilities Management responsible for helping the Team develop the Plan in accordance with this guideline.

Micro-Watering: The utilization of drip irrigation in conjunction with Florida native plantings.

Organization: A building occupant in a Lee County building or facility which will be further identified in the plan.

Plan: The facility/area specific roadmap used to implement energy/resource usage guide.

Potable Water: Water that is safe for human consumption.

Non-potable Water: Water that is not safe for human consumption.

Primary Energy Resource: Raw resources that enter the facility from an energy supplier.
NOTE: Primary energy resources may include electricity, natural gas, petroleum products, solid fuels, water (both potable and non-potable).

Procedure: Specified way to perform an activity or process.

Record: Evidence of activities performed or results achieved.

Re-Commissioning (retro commissioning): Restoration of existing facilities to a higher energy/resource efficiency through renovation, upgrade, and/or tune-up of existing systems or building processes.

Recycling: Term used to describe a series of activities that includes collecting recyclable materials that would otherwise be considered waste, sorting and processing recyclables into raw materials such as fibers, and manufacturing the raw materials into new products.

Secondary Energy Resource: Converted form of primary energy resource.

NOTE: *Secondary energy resources may include steam, compressed air, chilled water, and hot water.*

Secretary: The person responsible for keeping and publishing meeting minutes for the Team.

Significant Energy Uses: Primary or support equipment, processes, applications, or activities identified by the energy profile as a significant component of an organization's energy cost and/or consumption.

NOTE: *Significance is determined by the organization.*

Solid Waste: Non-liquid, non-soluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, and mining residues.

Supplier: Entity that provides a product or service to the organization.

NOTE: *Examples include a utility that sells electricity or an energy service company that provides consulting to the organization.*

Sustainability: The ability to provide for the needs of the world's current population without damaging the ability of future generations to provide for themselves. When a process is sustainable, it can be carried out over and over without negative environmental effects or impossibly high costs to anyone involved.

Target: Measurable performance requirement to be set and met to achieve part or all of a goal.

Team: A group responsible for the development of the Energy/Resource Plan. This group will consist of a Chairperson, Secretary, Manager of Energy Conservation/Green Building Initiatives, and others as assigned.

United States Green Building Council (USGBC): A private entity nationally recognized for setting standards in environmental and energy resource usage called LEED.

Zero Scape: The utilization of Florida native landscaping which requires minimal maintenance and watering.

3.0 BASIC REQUIREMENTS TO BE INCLUDED IN THE PLAN

3.1 General Requirements (overview)

The building or site organization working with Facilities Management shall first develop a Team by assigning a group of key personnel to develop the plan. This group will appoint a Chairperson from the main functional organization in the facility or area. The Manager of Energy Conservation/Green Building Initiatives from Facilities Management will act as the technical advisor to the Team and help guide the group to ensure the Plan is consistent with this guide.

Meetings will be held at least quarterly while developing the Plan or as often as agreed to by the Team. Meeting minutes will be kept by the Secretary of the Team and kept on file. Meeting minutes will be forwarded to all team members and the Facilities Management Deputy Director of Lee County. Once the Plan is established, a biannual review of the Plan and appropriate data by the Team is required with a written report forwarded to the Facilities Deputy Director.

3.1.1 Team Building

Once an area has been selected for development of a site specific plan, the Manager of Energy Conservation/Green Building Initiatives will conduct one or more training sessions for the employees. This training will consist of power points showing their areas current resource usage, placing this usage into context County-wide, nationally and globally. Conducting an individual carbon footprint exercise, showing the potential reductions in resource use, obtaining signed contracts from as many employees as possible in which they agree to follow the Plan and issuing one low energy light bulb to each person who signs the contract for their personal use.

3.2 Documentation Requirements

3.2.1 General Requirements

The plan for energy/resources documentation shall include:

- a) a current list of team members and who attended each meeting
- b) a section devoted to each type of energy or resource that will be tracked as a minimum electricity, potable and non-potable water will be tracked
- b) an energy/resource use tracking database with reporting capability;
- c) documented steps for purchase, use and conservation of energy/resources
- d) documents supplied by the Team to the organization(s) to ensure the effective planning, operation, and control of its significant energy/resource related processes and equipment.

3.2.2 Energy/Resource Manual

The Team shall develop and maintain an energy/resource manual, which may be a separate document or integrated into an addendum of the plan, addressing the requirements of this guide. Scope of the manual shall be documented in the Plan. The manual shall at a minimum include or reference electric usage by month, water both potable and non-potable by quarter and other consumable resources as decided upon by the Team.

3.2.3 Control of Documents

Documents utilized in tracking usage of energy/resources shall be controlled by the Secretary. The plan will be reviewed and approved by the Facilities Management

Director or designee and top management of the facility or area for which the Plan was prepared. Once approved, no changes to the Plan may be made without concurrence of the Director and original building management signatories or their designees.

3.3 Recordkeeping Requirements

The Team secretary shall be responsible for maintaining documented procedure(s) for managing energy/resource records. Energy records shall be legible and active records shall be kept accessible for review and benchmarking. The records will remain on file for the life of the facility.

4.0 MANAGEMENT RESPONSIBILITY

4.1 Management Commitment

Top building/facilities management shall demonstrate commitment to the development and maintenance of the management system for energy/resources and continually improving its effectiveness by:

- a) participating in the initial strategic planning and formation of the Team
(See Section 5.3)
- b) communicating to the organization the importance of energy management,
- c) approving in writing the submitted site specific energy/resource plan,
- d) ensuring concrete, measurable goals are identified in the Plan,
- e) conducting periodic management reviews (no less than once every 6 months),
- f) ensuring the availability of adequate resources both in funds and personnel to meet plan requirements once approved.

4.2 Implementation of the Plan

The organization and Facilities Management shall implement the plan once approved. Nothing in the plan may conflict with any current or future directives from Lee County regarding energy and resource management. The organizations management and Facilities Management will ensure the plan considers the following:

- a) efficient and effective use of resources;
- b) energy-related environmental impact;
- c) available alternate sources of energy
- d) level of quality and appropriateness of sources; and
- e) effect on operations.

4.3 Strategic Planning

The organization's management shall review the Plan to ensure that the results of energy/resource planning are consistent with the nature and function of their work and are obtainable. The Manager, Energy Conservation/Green Building Initiatives, shall provide management with the energy/resource information needed for initial strategic planning.

4.4 Responsibility and Authority

The plan will identify positions in the facility who will act as energy/resource coordinator(s) with the responsibility and authority to:

- a) ensure on a routine basis the plan for energy/resources is being followed, implemented, and maintained;
- b) report on plan performance to the Team at their scheduled meetings.

The Team shall include, as appropriate, representatives from functional areas dealing with the selection, procurement, consumption, disposal, and environmental impacts of fuels, energy and other resources.

The Manager, Energy Conservation/Green Building Initiatives, working with the Team, shall plan and direct technology upgrades/changes agreed to in the Plan designed to support the stated organizational energy/resource goals as outlined in the Plan.

Job functions that significantly impact or control energy/resource use, shall be identified in the Plan.

5.0 ENERGY/RESOURCE MANAGEMENT PLANNING

5.1 Energy/Resource Profile

As part of Plan development, Facilities Management will develop a site or area specific energy/resource profile and make it available for review by the organization(s) and newly formed Team. The profile will be prepared by the Manager, Energy Conservation/Green Building Initiatives, using various methods such as utility bills, portable monitors and personnel interviews to reveal trends, anomalies, price signals, and energy/resource and cost allocations to provide a perspective on the impact of energy/resource on cost of a facility or areas operation. The energy profile shall include utility tracking, significant energy/resource uses, and key performance indicators (KPI's). For the energy/resource profile, at least 12 months of data should be analyzed, if less than 12 months data are available, a projection may be possible but notes must be added to clearly indicate that the numbers are not hard data but extrapolated. A means of connecting the energy/resource use to facility operating times and specific types of operational events if not a daily event shall be developed, as appropriate. An example would be keeping a building open late for a specific purpose such as use as a polling location for an election.

5.1.1 Utility Tracking

Utility tracking is a primary tool for the Team. Lee County has Account Representatives from both FP&L and LCEC who may be contacted through the Manager, Energy Conservation/Green Building Initiatives.

5.1.2 Significant Energy/Resource Uses

The Team shall identify the facilities, or groups within a facility, equipment, and processes, that significantly affect energy/resource consumption, cost, or energy-related environmental impact.

5.1.3 Key Performance Indicators

Key performance indicators (KPI) shall be developed to relate energy, water and other resources to some measurable standard such as cost, volume, Btu/sf, \$/sf or other agreed upon measurement.

5.2 External Information

External information, alternate suppliers, new technology, and forecasts of energy/resource availability and cost, may be considered in the Plan.

5.3 Energy/Resource Assessment

Information on the current state of equipment and processes related to energy/resource purchase, use, storage and disposal shall be collected on a regular basis. This information shall be used in identifying opportunities for continual improvement.

5.4 Goals and Targets

During development of the Plan the Team shall consider the County energy/resource policy and set goals reflecting this policy. Where practical, goals shall be measurable. In establishing and reviewing goals, the Team shall consider the information collected from the energy/resource profile, including the significant energy/resource uses, as well as external information and results of energy assessments in developing goals.

For each goal, one or more measurable targets shall be established. A target shall be expressed in terms of improvement in a KPI, percentage improvement in cost or consumption, or another method of demonstrating measurable movement toward achieving the goal. Targets shall be addressed with specific energy/resource management projects.

Planning of energy/resource management projects shall include consideration of: information on available or alternate sources, maintenance needs, operations, energy-related environmental impacts, safety and health, coordination of planned actions, and its effect on the entire facility operation.

For new facilities and major modifications to existing structures, systems impacting energy/resource use shall be identified and relevant factors considered in the design. Energy/resource goals related to the design shall be consistent with overall business and financial considerations, while remaining consistent with the County's energy policy. Major decisions affecting energy/resource systems and use shall be recorded in the Plan.

6.0 IMPLEMENTATION AND OPERATION

6.1 Purchasing

Individuals and groups within Lee County Facilities who have responsibilities in the purchase of energy, products and services shall consider the purchase of energy, products and services that have a lesser or reduced effect on human health and the environment when compared to other items that serve the same purpose.

NOTE: Use of the U.S. Environmental Protection Agency cost/benefit analysis outlined in the Environmentally Preferable Purchasing Guidelines is recommended.

6.1.1 Energy/Resource Supply

The Team shall develop and maintain documented procedures within the Plan to ensure that the purchase of energy/resources conforms to the County policy and is consistent with energy/resource goals and targets within the Plan.

a) Energy/Resource Purchasing Specifications

The Team shall define or agree to specifications in the following areas as applicable: energy/resource quality, availability, capacity, variation over specified time, and billing parameters. The organization shall review and approve energy purchasing specifications (such as an RFP or RFQ) for adequacy prior to release.

b) Evaluation of Energy/Resource Suppliers

The organization shall evaluate and select potential suppliers on the basis of their ability to meet the organization's requirements. Consideration shall be given to business plan risk, reliability, quality, and environmental impact.

c) Energy Purchasing Contracts

Energy purchasing contracts shall be reviewed by the Manager, Energy Conservation/Green Building Initiatives, for adequacy prior to approval or acceptance. The contract performance of energy suppliers shall be evaluated periodically during the contract period. Results of the evaluations shall be recorded.

6.1.2 Energy Equipment and Resource Systems

In addition to operations and maintenance costs, the organization shall consider energy/resource efficiency, recyclability, durability, reusability, recycled content, and product disassembly potential in the selection process for purchases of equipment and systems related to significant energy/resource uses.

6.2 Facility, Equipment, and Process Control

6.2.1 Commissioning, Recommissioning, and Continuous Commissioning

Direct and indirect costs and benefits when commissioning, re-commissioning or implementing continuous commissioning of new and existing facilities, central energy plants, and individual energy systems shall be recorded and retained.

6.2.2 Control of Equipment and Processes

The organization(s) and Facilities Management shall ensure control of equipment and processes related to significant energy/resource uses. These controls shall include:

- a) the use of documented procedures and operational parameters, where their absence could significantly affect energy/resource purchase, storage, use, or disposal;
- b) use of equipment suitable to the organization's policy and goals contained in the plan;
- c) monitoring and measuring of equipment and processes;
- d) appropriate maintenance of equipment to ensure continued or improved facility efficiency.

6.3 Energy/Resource Management Projects

6.3.1 Purpose

The organization(s) and Facilities Management shall establish, implement, and maintain energy/resource management projects to achieve defined targets, although projects may also be implemented without being associated with a specific target. The purpose of well defined management projects is the continual improvement of resource and energy usage. As appropriate, projects shall be evaluated using the targets and overall impact on the plan.

6.3.2 Project Selection

Energy/resource management project selection shall be based on a process that considers a range of items, including relevance to Lee County's energy/resource policy, impact on goal(s), cost, expected results, resource availability, and other relevant factors. Projects shall have an appropriate level of analysis, including: projected energy and non-energy benefits and implementation and maintenance costs (preferably including lifecycle costs). Implementation cost shall consider capital and equipment, labor, operation, financing, risk, measurement and verification, and other factors.

6.3.3 Project Implementation

Project implementation shall include appropriate measurements to verify that planned results are being achieved. Changes shall be made to relevant documentation and to required training and familiarization of staff as needed.

6.4 Control of Outsourced Energy/Resource Services

If a Lee County building occupant should decide to outsource any energy or resource supply service, the Team shall ensure that results from this outsourcing are in agreement with the plan.

6.5 Communication

The Manager, Energy Conservation/Green Building Initiatives, will prepare bi-annual reports for review of the Facilities Management Director, Deputy Director, and key management of the facility.

6.6 Training, Competence, and Awareness

Personnel performing tasks having a significant impact on energy/resources shall be deemed competent through demonstration or proof of suitable education, training, skills, and experience.

The organization shall identify and fulfill training needs of personnel performing activities significantly affecting energy/resource purchasing, storage, use, or disposal.

The organization shall ensure that both existing and new personnel are aware of the importance and relevance of their actions and how they affect the energy/resource goals and targets. Appropriate records of training shall be kept.

6.7 Energy Monitoring

The Manager, Energy Conservation/Green Building Initiatives, shall ensure the periodic collection of necessary energy and related data for the purpose of tracking consumption, cost, significant energy uses, and changes to key performance indicators.

7.0 MANAGEMENT REVIEW

At intervals not to exceed 6 months, top management and the Team shall review the performance of the Plan for suitability, adequacy, and effectiveness. The Manager, Energy Conservation/Green Building Initiatives, shall ensure the information necessary to these evaluations is collected and presented to management. The organization shall consider its commitment to continual improvement in decisions related to actions taken. Records of management reviews shall be maintained.

Input to the management review shall include:

- a) results of management system for energy/resource audits,
- b) performance of building occupants in support of the plan,
- c) changes to KPIs,
- d) extent to which goals and targets have been met,
- e) status of corrective and preventive actions,
- f) follow-up on action items from previous plan reviews,
- g) pertinent changes in the organizational or energy/resource situation, and
- h) recommendations for improvement.

Outputs from the plan review shall include any decisions or actions related to:

- a) possible changes to the plan,
- b) changes in KPIs, and
- c) changes to goals or other elements of plan for consistency with the Teams commitment to continual improvement, and
- d) allocation of resources.

