

Action plan:

## Formulating an energy management action plan



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# Formulating an energy management action plan



**A**n energy management action plan provides the 'big picture' as an ongoing framework for optimising overall energy use and achieving success with regard to long-term energy efficiency.

The ongoing need to cut operating costs - as well as environmental concerns - are the driving force for business to change the way energy is consumed and how energy use is viewed. Rather than being an inevitable cost of doing business, energy is now considered to be a manageable input to the process, much like any raw material or resource.

The first step in managing energy costs is the creation of an energy management action plan - this brochure provides a logical format for developing such a plan, which formalises:

- The thought processes involved in understanding the relative magnitude of energy costs
- The possible ways to reduce energy use
- Energy targets that are likely to be achievable
- Other associated steps or activities that need to happen.

An energy management action plan describes the way your organisation will strategise and use its resources to meet its energy efficiency objectives.

Energy management planning is intended to be a process of continuous improvement, with a closed-loop feedback approach being the most effective in demonstrating results as justification for further investment in energy efficiency. The following diagram shows the circular steps recommended to adopt during the planning process:



**Plan:** Ensure that budgets, resources and timelines are established as measures to meet targets and objectives. Include tracking and monitoring processes to facilitate effective reports to management.

**Do:** Execute the plan by deploying resources and budgets, preparing status reports and implementing a communication strategy.

**Check:** Track and monitor the performance of projects and programmes against desired outcomes and report these to management.

**Act:** Analyse the variations to the plan and their causes - recommend improvements, course corrections and modifications for implementation.

Whilst the focus is on optimising electricity use, the scope of the plan should include all energy sources such as natural gas, coal, diesel, biomass and other renewable fuels. This will ensure a complete understanding of opportunities for energy cost reduction and self-generation optimisation.



# Structuring your energy management action plan



**A** sequence of steps to be taken or activities to be performed for a strategy to succeed, an action plan comprises three major elements:

- Specific tasks: what should be done and by whom?
- Time horizon: by when should it be done?
- Resource allocation: are funds available for identified steps and activities?

## Let's get started

Define the operations and factors that affect energy use in your organisation.

Considerations to include are:

1. Process descriptions
2. Unitised and total energy costs
3. Energy costs as a percentage of operating costs
4. Physical location and access to resources
5. Specifics of past conservation projects and successes
6. Energy use information sources used in your plan, such as:
  - Utility bills
  - Metering/monitoring systems
  - Past energy and feasibility studies
  - Knowledge and experience of key personnel in operations, maintenance and engineering.

## Define your organisation's energy policy

An energy policy sets specific goals and objectives to improve energy efficiency and reduce energy costs in your organisation. Have your Chief Executive Officer sign the policy and promote the initiative throughout the business - a written commitment encourages staff to pursue energy management improvements. It can also be used as a public statement to demonstrate the organisation's direction to its stakeholders.

See a sample of an Energy Policy document on pages 5 and 6 of this brochure.

## Ensure buy-in by senior management

Senior management support - together with demonstrated ongoing commitment - are essential for establishing and maintaining a successful long-term energy management programme.

Nominate:

- A senior manager to sponsor your organisation's energy management programme and take responsibility for its outcomes
- An energy facilitator at an operational level to drive the programme.

The nominated senior manager should:

- Be responsible for the achievement of performance objectives
- Obtain funding approvals for energy management projects
- Communicate the organisation's energy policy directives to senior management and the board
- Ensure that energy management is a regular agenda item on the agenda at executive level meetings
- Have clear accountability for the overall success of the programme.

*Refer to the Business case for energy efficiency - Brochure 2 in the Eskom Energy Management Information Pack - for comprehensive advice on how to build a case for energy efficiency in your organisation.*

## Identify an energy team

The success of a long-term energy management programme depends on the people driving it. Identifying a team of appropriately-skilled people from within the organisation to put the plan into action is, therefore, crucial. If your organisation doesn't have an existing energy manager; a champion for each of the major sections of the programme should be nominated.

**Tabulate all individuals that have an impact on energy use and potential energy projects; identify whether it is their basic job function or if they are co-champions of these efforts. Also identify other programmes or committees that have an impact on energy such as continuous improvement or value/waste committees.**

Use this table as a guideline to set up your core energy team:

Name	Position	Energy champion?	Participation level
Name	Energy manager	Yes	80%
Name	Production manager	Yes	5%
Name	Buyer (procurement)	Yes	5%
Name	Facilities manager	Yes	5%
Name	Engineering team leader	Yes	10%
Name	Communications manager	Yes	20%



## Establish an energy baseline

This section of your energy management action plan requires basic data gathering and think of the best way to show how and where energy is used in your organisation - the more detailed this section is, the easier it will be to demonstrate the success of a long-term energy management programme.

Fuel source usage breakdown can be tabled like this:

Fuel source	Total annual consumption	Total annual cost	Percentage of total energy cost
Electricity			
Natural gas			
Fuel (oil)			
Renewable energy			
Other			

Now table which equipment and processes account for the consumption of each fuel source, which will help you to identify the best approach to improve energy efficiency. It may be necessary to construct a table that shows the annual energy usage profile each month if your organisation's operations vary greatly over the course of the year.

Show electricity use by system type:

End uses	Number of machines	MWh/year.	% of total	Uncertainty +/- %	Source of energy information
Fans					
Pumps					
Compressed air					
Material handling					
Heating					
Lighting					
Process equipment					
Other					
<b>Total</b>					

For companies in the industrial sector, it is recommended that electricity use be shown by process:

Unit process	MWh/yr	% of total	Uncertainty +/- %	Source of energy information
Saw mill				
Planer mill				
Lumber drying				
Plywood mill				
Chipper mill				
Offices				
<b>Total</b>				

The energy management action plan also asks for picking a meaningful measure of plant - or process - throughput and calculating energy intensity per unit (KPI) of throughput by dividing total annual energy use of each fuel source by throughput. This will be the most important number for tracking and reporting energy efficiency success to senior management. If possible, calculate energy intensity for five or more past years and show the trend. Also, research the typical energy intensity of your industry and compare it with your findings.

Proceed to create a table of known opportunities for energy-saving projects that require capital investment. List the systems and processes where savings can be achieved along with their energy consumption, potential for savings and next steps to achieving these savings. State your source of information for energy savings and use a separate table for each type of fuel.

**Refer to: How to do a walk-through energy assessment: methodology and checklist - Brochure 3 in the Eskom Energy Management Information Pack. It will help you to identify where energy is being wasted in your organisation and, therefore, the opportunities to save energy.**

## Develop a list of five bullet points for an overview of your Energy Management Action Plan:

1. Define targets and objectives over an appropriate timeframe (your energy policy)
2. Establish an energy usage baseline - list all major energy using equipment
3. Describe three to five high-potential energy-saving capital projects - list estimated energy savings, capital costs and timelines
4. Outline planned short-, medium- and long-term energy management activities
5. Determine how to communicate your plan to employees and what programmes will be put in place to raise employee awareness.

## Cement the action plan

An energy management action plan is a way to make sure your organisation's vision for energy efficiency is made concrete - the plan should:

- Be complete, clear and current
- Define and organise the steps or changes to be brought about in your organisation
- Determine the steps that should be taken first to reduce consumption

Depending on the opportunities identified during the establishment of the energy baseline and the walk-through energy assessment, list the capital investment projects to be undertaken to save energy.

## Each energy-saving opportunity identified should include the following information:

What interventions or changes will occur? (For instance, all conventional lightbulbs have to be replaced with Compact Fluorescent Lamps (CFLs)).

Who will carry out these interventions or changes?

By when should these interventions or changes be completed?

What resources (funding, staff and equipment) are needed to carry out these interventions or changes?

Who should be informed about these interventions or changes?

Carefully review the completed energy management action plan - make sure that each proposed intervention or change will help accomplish your organisation's energy-saving mission.

Remember the 80 - 20 rule: Successful efforts are 80% follow-through on planned actions and 20% planning for success. Now take the plan and run with it!

## Mobilise your core energy team

Getting members of the energy team to fulfill their responsibilities can prove to be testing. Ask members to be accountable and get things done on a regular basis according to stipulations and time frames of the energy management action plan.

Do this by:

- Phoning them regularly to determine their progress with allocated tasks; these calls should be friendly and supportive, giving members a sense that they are valuable to the team
- Distributing the action plan in writing to all members (with names attached to specific tasks); make sure timelines are clear and current
- Asking members to report on accomplishing tasks they have set out to do at regular group meetings, such as energy efficiency committee meetings or board meetings; consider making this a regular part of these meetings
- Celebrating accomplishments; it is important that 'getting something done' is recognised by the organisation.

## Keep communicating

Always track what actions and measures have been implemented successfully. Keep everyone informed of these successes and, when communicating, have the following three questions in mind:

- Are we doing what we said we will do?
- Are we doing it well?
- Are we advancing the energy efficiency mission?

**Refer to: Creating an energy awareness programme: behavioural change at work - Brochure 4 in the Eskom Energy Management Information Pack - for more help on generating awareness of energy efficiency programmes in your organisation.**

# Sample:

## Energy Policy

### **Our long-\* and medium-term\*\* corporate goals are:**

- Commit organisational resources to energy management
- Reduce our energy costs
- Give high priority to energy efficiency investments
- Consider life-cycle energy costs for all new projects
- Minimise CO<sub>2</sub> emissions
- Minimise environmental impact
- Where possible, use energy from sustainable sources.

### **Our short-term\*\*\* corporate goals are:**

- Publish a corporate energy policy
- Reduce the environmental impact of fuels used by reducing our emissions of a tonnes of CO<sub>2</sub> by X% over Y years
- Reduce consumption of energy by X% of Z units of energy delivered over Y years
- Reduce energy consumption for typical/good practice benchmark levels within Y years
- Achieve accreditation under the Energy Efficiency Accreditation Scheme
- Achieve the emissions reduction target set in our Environmental Policy\*\*\*\*
- Implement a regular programme of energy assessments
- Set and publish performance improvement targets
- Report performance changes and improvements annually
- Increase staff awareness
- Nominate employees to act as departmental energy champions
- Seek competitive tenders for gas and electricity supplies
- Identify all cost-effective energy efficiency measures
- Establish a monitoring and targeting system
- Provide regular management reports on costs and consumption



- Establish a budget for investing in energy efficiency
- Specify energy-efficient design of new buildings, and procure an energy-efficient plant and equipment.

Endorsed by Mr/Ms ....., the Chief Executive Officer, on this ..... day of .....

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Signature

- \* Typically, long-term goals may be the outcome of a three to five-year strategic plan.
- \*\* Medium-term goals are considered to be achievable in the time frame of a year.
- \*\*\* Short-term goals should be aimed for over a few months.
- \*\*\*\* See Brochure 7 in the Eskom Energy Management Information Pack for a sample of an Environmental Policy.





# Supporting information



ISO 50001 is an international standard that provides a framework of requirements to establish, implement and maintain an energy management plan or system that will enable your organisation to follow a systematic approach to optimise energy consumption and continually improve your level of energy efficiency.

**For an overview of the standard go to:**

<http://www.iso.org/iso/home/standards/management-standards/iso50001.htm>

**Credits:**

**Information in this brochure has been sourced from:**

- [www.carbontrust.com](http://www.carbontrust.com)
- [www.iso.org](http://www.iso.org)





## The Eskom Energy Management Information Pack comprises:



### Energy management action plan

Business case for energy efficiency

How to do a walk-through energy assessment: methodology and checklist

Creating an energy awareness programme: behavioural change at work

HVAC systems: energy-efficient use and technologies

Energy-efficient solutions: an overview of technologies

Green growth cycle: energy efficiency in support of competitiveness

### Brochure 1

Brochure 2

Brochure 3

Brochure 4

Brochure 5

Brochure 6

Brochure 7



