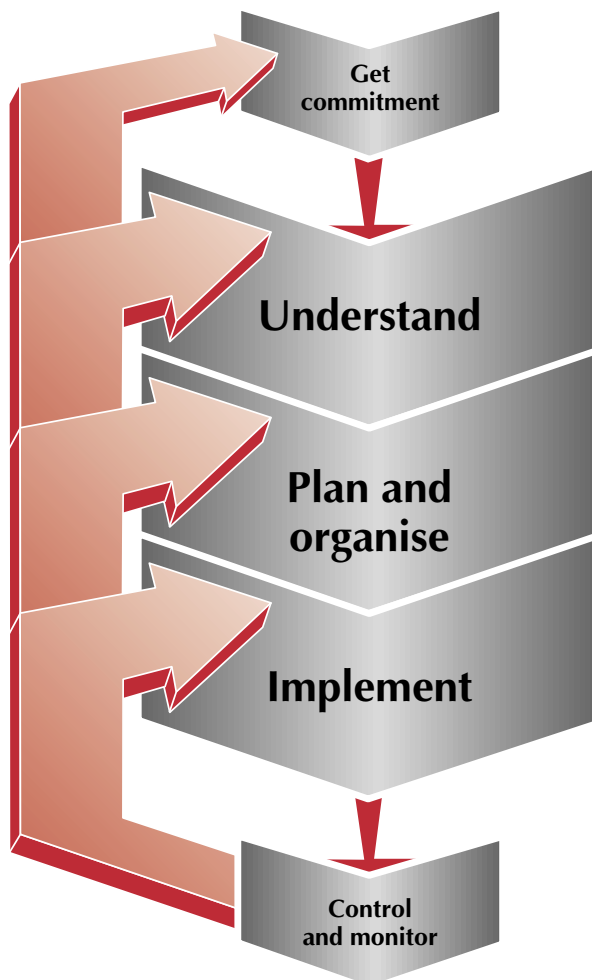


Organising energy management

- a corporate approach



- Understanding energy efficiency issues
- Using the energy management matrix
- Roles and responsibilities
- Keeping control

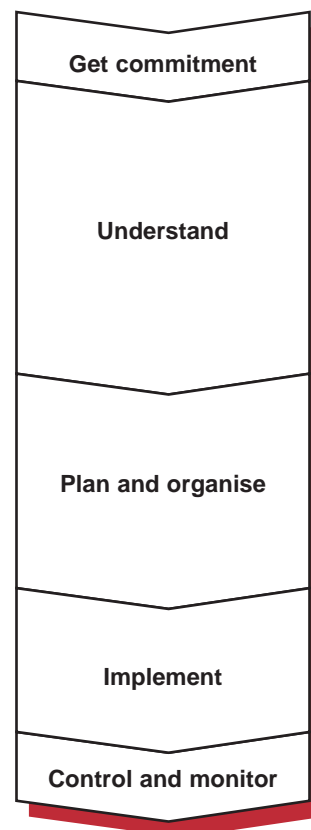


ENERGY EFFICIENCY

BEST PRACTICE
PROGRAMME

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1 INTRODUCTION

ORGANISING ENERGY MANAGEMENT

This Guide has been designed to offer management guidance, technical advice and information on setting up and maintaining an organisational structure to manage energy efficiently and cost-effectively.

Companion publications include:

- *GPG 200 A strategic approach to energy and environmental management*
- *GPG 186 Energy policy*

Other related publications include:

- *GPG 67 Energy champions: a selection of case histories*
- *GPG 165 Financial aspects of energy management in buildings*
- *GPG 84 Managing and motivating staff to save energy*
- *GPG 85 Energy Management Training*
- *Making a Corporate Commitment: energy on the boardroom agenda*
- *Various Good Practice Case Studies*

These documents are available from BRECSU (see back page for details).

PURPOSE AND SCOPE OF THE GUIDE

This Guide is intended to provide the management infrastructure to support effective energy management.

The Guide uses a 5-step, strategic approach to organising energy management, introduced in an earlier Guide - 'A strategic approach to energy and environmental management' (GPG 200) – and provides practical advice on how to apply this approach.

Intended readership

The Guide is designed for:

- senior managers and directors who control everyday corporate management and its priorities
- departmental managers and staff who need to achieve the results, including facilities managers
- energy managers or those responsible for energy.

Summary of the Guide

- **Commitment and understanding** are covered in Chapters 1-6, which introduce the 5-step measuring approach, measuring current performance and developing an energy use profile. Chapter 5 discusses the setting of strategic goals in the context of an energy policy. Energy policy can also be influenced by the needs of stakeholders, discussed in Chapter 6.
- **Planning and organising** are covered in Chapters 7-9. Chapter 7 deals with the setting of objectives and targets. Action plans are covered in Chapter 8, whereas Chapter 9 covers the way in which implementation is sustained by assigning roles and responsibilities.

- **Implementation** is covered in Chapter 10 which presents the case for integrating the energy improvement programme with the implementation of other management initiatives, and Chapter 11 which discusses the importance of having the right management structure in place before trying to implement an energy improvement programme.
- **Control and monitoring** of progress is discussed in Chapter 12. This last chapter also considers the benefits of using independent auditors to ensure quality of environmental data.

The Guide will help you apply the 5-step approach within your organisation, through a number of exercises and action points. You don't have to read the whole of the Guide or work straight through it. Simply decide how far you have reached in implementing energy management and join at the appropriate section.

For ease of reference and to provide a rapid overview of the subject matter, each section of the Guide has a summary.

Practical exercises have been included in some sections of the Guide to illustrate the main themes and to enhance understanding of key issues.

2 STRATEGIC APPROACH TO ENERGY MANAGEMENT

INTRODUCTION TO THE 5-STEP APPROACH

The 5-step approach to organising energy management (as shown in figure 1) is a structured method for managing projects and achieving results. It can be applied to simple as well as complex tasks and has proved itself to be both robust and practical.

Gain commitment

In order to achieve action towards lasting energy efficiency, it is essential to gain the commitment of the most senior members of the management team as individuals and part of the corporate body.

This is described further in the Department of the Environment (DOE) publication 'Energy on the boardroom agenda', produced as part of the Making a Corporate Commitment campaign.

Senior managers invariably determine priorities for the rest of the organisation by:

- personal endorsement and example setting
- sanctioning necessary resources
- setting performance expectations and requiring feedback
- encouraging and rewarding success.

Gaining executive commitment for energy management will require:

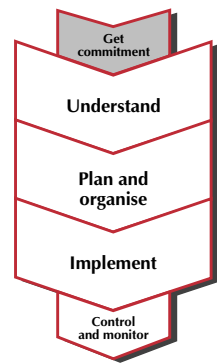
- a convincing case for action or resources (financial or environmental)
- clear action pathways
- merits that fit the strategic company goals and fulfil the needs of stakeholders.

These three ingredients to success require careful preparation, whether the idea for improving energy management is initiated by a member of the executive management team or by less senior managers.

Understand

Understanding begins with:

- learning about current energy consumption levels and costs
- mapping the ways in which energy is used
- determining the standards for efficient consumption in your organisation
- analysing the possibilities for saving costs through reducing energy consumption so that realistic targets can be set
- recognising the environmental effects of energy consumption.



IN THIS CHAPTER:

- *Introduction to the 5-step approach*
- *Using the 5-step approach to organising energy management*
- *The importance of taking company culture and organisational structure into account when planning to achieve excellence in energy management*

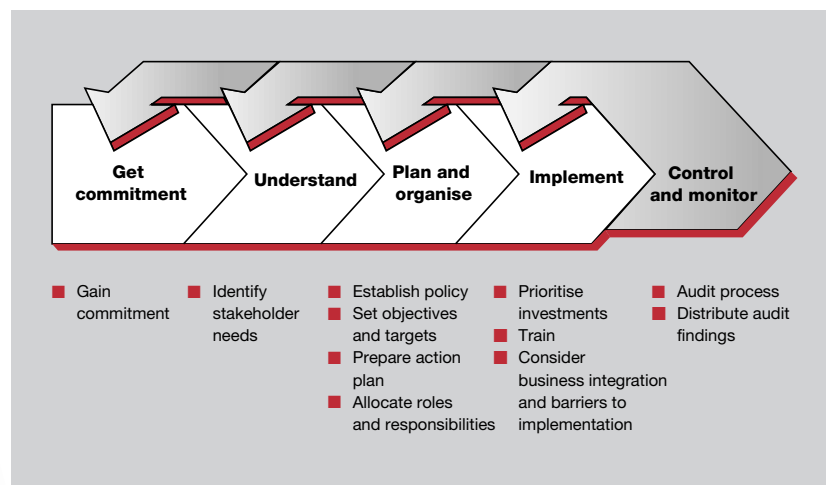


Figure 1 A systematic approach is needed for effective energy and environmental management

STRATEGIC APPROACH TO ENERGY MANAGEMENT

Achieving excellence in energy management in any organisation must take the management structure and culture into account

Planning the way in which energy management is organised is a senior executive responsibility which will determine the success or failure of the energy policy...

...this goes well beyond 'appointing an energy manager'

First set the energy management structure...

...then use the structure to set targets and implement projects to achieve those targets

BEST PRACTICE TIP

Integrate for success: senior managers should treat energy efficiency projects just as they do other important management initiatives - they should expect progress, and require regular reporting.

Plan and organise

The first step should be to produce a suitable energy policy for the organisation. By developing and publishing such a policy, senior managers promote their commitment to achieving excellence in energy management. They should do this in a way that harnesses the culture of the organisation to best effect. Good Practice Guide 186 'Developing an effective energy policy' (GPG 186) gives valuable guidance on the development and communication of an energy policy.

Introducing energy management inevitably involves some changes. Senior executives should therefore give careful consideration to the way in which they introduce their energy management programme. In order to create the optimum environment for success of their policy, they should:

- **communicate and champion their policy**
 - the policy is to be seen by everyone as an important and integral part of their job responsibilities
- **plan and organise their managers**
 - bring people together who can make the policy work locally
 - ensure that existing equipment is set up and working properly
 - measure where you are and introduce new energy saving proposals
- **give a clear lead**
 - define expectations: set long term goals, medium term objectives.

This goes well beyond 'appointing an energy manager'. It involves using the energy manager in a managerial role to assist in driving forward a programme of continual improvement in energy efficiency. If there is no energy manager, another manager should be assigned to this role.

Implement

Everyone must have some involvement in implementing the energy policy. However, to facilitate a structured approach, start by assigning special responsibilities to some individuals and groups.

- Set up the energy management and reporting structure within the company by nominating (by mutual agreement) a board member to be responsible for energy management.
- Arrange for this board member to draw together an Energy Committee consisting primarily of key energy users and supported by an energy manager or facilities manager.
- Arrange for the team to devise short term targets to achieve the medium term policy objectives. Set up a series of short and longer term projects, to achieve specific targets.
- Tell everyone what you are trying to achieve, and maintain regular two-way communication.

It is important that energy efficiency projects, like other management projects, are integrated into the everyday management of the company.

Control and monitor

Each project should have an owner – an individual or a team with overall responsibility for monitoring efforts and steering it to a successful conclusion. Senior executives should underline the importance of projects by requiring regular progress reports, and by publicising and endorsing success, which can further support individual motivation and commitment.

3 MEASURING CURRENT PERFORMANCE

USING THE ENERGY MANAGEMENT MATRIX

The energy management matrix is a versatile tool. It can be used to check quickly on the priority attached to different aspects of energy management in an organisation. The matrix can be used for many other purposes, including targeting, auditing and policy checking.

Each column of the matrix (see fold-in page) deals with one of six organisational issues - policy, organising, motivation, information systems, marketing and investment. The ascending rows, from 0 to 4, represent increasingly sophisticated handling of these issues. The aim is to move up through these levels towards current best practice and, in so doing, to develop a balance across the columns.

Exercise 1 suggests that you use the energy management matrix to gain an overview of the current status of energy management in your organisation. Involving senior management colleagues in this exercise enables you to gain an understanding of how energy management is seen from different perspectives.

Once the broad picture is obtained and understood, it is then possible to focus more easily on the 'organising' column of the matrix.

Organising

This Guide is particularly concerned with the matrix column headed 'organising'.

Improving the way in which energy management is organised within a company will involve:

- finding out where the current organisation stands on the 'organising' column (see Exercise 1)
- recognising the next stages in moving up the column
- applying the 5-step approach to moving up the column.

Moving up the organising column implies improvement in the organisation of energy management. However, this is not possible in

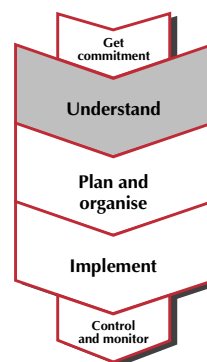
isolation. Improvements will be necessary in other organisational aspects (matrix columns) of energy management, such as information systems, in order to support an improvement in organising.

Based on the general experience that organisations waste around 40% of their energy due to a variety of inefficiencies, each level of progression up the matrix might be expected to achieve a reduction of around 10% of overall energy consumption.

Using performance standards to measure current performance

You will wish to know where the organisation currently stands, not only to see how well it is performing in energy management, but also to define policy and potential savings.

A convenient way of measuring energy management performance is by defining performance standards. You can define your own performance standards, or base them on the organising levels in the energy management



IN THIS CHAPTER:

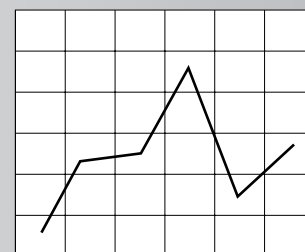
- Using the energy management matrix to help understand the current organisation of energy management and measure its performance
- Moving towards an integrated energy management approach

EXERCISE 1 Checking where you are

1. Photocopy the energy management matrix (fold-in page). On each of the columns, highlight the position you believe comes closest to describing the situation in your organisation. Make entries between boxes where appropriate.
2. Take further copies and request several (say six) senior colleagues, from different disciplines, to highlight the boxes which they feel best describe the situation in your organisation as they see it. Explain to them that this is part of a short review of energy management, and that their frank opinions are needed.
3. Compare the results with your colleagues as a group and try to achieve an 'average' profile providing them with feedback to maintain interest. If there are significant differences in the perceived levels of attainment, it is important that you and your colleagues understand the reasons for differences.

The results of Exercise 1 should be retained as valuable background information for planning future projects and actions.

Bear in mind, however, that it may not always be appropriate to aim for Level 4 - especially in the case of smaller organisations. The level of sophistication you aim for should relate to financial and other benefits which can be achieved by improving your energy management performance.



MEASURING CURRENT PERFORMANCE

ORGANISING COLUMN

LEVEL 4
Energy management fully integrated into the management structure. Clear delegation of responsibility for energy consumption.

LEVEL 3
Energy manager accountable to energy committee representing all users, chaired by a member of the managing board.

LEVEL 2
Energy manager in post, reporting to ad-hoc committee, but line management and authority are unclear.

LEVEL 1
Energy management the part-time responsibility of someone with only limited authority or influence.

LEVEL 0
No energy management or any formal delegation of responsibility for energy consumption.

Examples of energy management performance		
LEVEL 4	<ul style="list-style-type: none"> ■ User departments can easily explain their current energy usage patterns. ■ Realistic goals for improving energy efficiency and reducing costs have been set by a working group representing the key energy users. The energy manager plays a key role in this group and in the goal setting activities. ■ Responsibilities and action programmes for 	<ul style="list-style-type: none"> ■ achieving these goals have been delegated. ■ Resources for the attainment of energy efficiency goals have been defined and allocated. ■ The board member responsible for energy efficiency provides a regular progress update to the board on energy efficiency in the organisation.
LEVEL 3	<ul style="list-style-type: none"> ■ Regular meetings of the energy committee take place, preferably under the guidance of a board member with specific responsibilities for energy. ■ The committee is engaged in developing (or has developed) goals and written action plans to improve the efficiency of energy usage. ■ The energy manager attends regular meetings of the energy committee in an advisory role. ■ Each main user department regularly attends the energy committee meetings. ■ The head of each main energy user department regularly receives meaningful 	<ul style="list-style-type: none"> ■ energy consumption information from the energy manager, and is aware of current trends in energy consumption in his/her area. ■ The energy manager is receiving regular feedback data from the user departments on activity levels for energy intensive activities. ■ Energy use has been quantified for the past calendar year and the current year to date and this information is readily available from the energy manager by energy type and by energy user group/department.
LEVEL 2	<ul style="list-style-type: none"> ■ Energy consumption data is available for the past year and the current year to date. ■ An ad hoc working group of key user department representatives has been formed to quantify the energy usage by department. ■ The energy working group (committee) has defined the kind of information needed by the user departments to enable them to 	<ul style="list-style-type: none"> ■ manage energy efficiency and set meaningful improvement targets. ■ The energy manager provides data to working group meetings. ■ Energy measurement systems are in place or being obtained to enable user data to be generated.
LEVEL 1	<ul style="list-style-type: none"> ■ Energy usage data and costs for the last calendar year are readily available. ■ General mapping has been done to define the main activities using energy. 	<ul style="list-style-type: none"> ■ Energy usage data is not available to the key energy user departments.
LEVEL 0	<ul style="list-style-type: none"> ■ Last year's energy costs can be obtained from the accounts department. 	<ul style="list-style-type: none"> ■ Energy consumption checking is confined to ensuring that no overpayment is made.

EXERCISE 2 Measuring current performance

1. Request appropriate information on energy usage from individuals or departments based on the above performance standards.
2. Check how quickly and how easily the information is made available to you.
3. Check the quality of the information you receive - ensure it is clear, to the point and presented in an understandable and non-technical way for senior management.
4. Assess the energy organisation performance of your company based on the quality of the responses and how easily you receive them.
5. Check your findings against your original rating of your energy management organisation.
6. Provide feedback to those who provide you with information.

4 GETTING STARTED

UNDERSTANDING KEY ENERGY ISSUES

Developing an energy use profile.

The key issues associated with energy use are similar to those for any other consumable item, service or raw material purchased. It is essential to define levels of energy use in your organisation to be able to determine energy savings.

In order to gain an appreciation of energy issues, you need to draw up a profile of energy use which answers the following questions:

- ▶ **WHY?**
Why (for what purposes) do we use energy?

- ▶ **WHEN?**
When do we use energy?

- ▶ **HOW MUCH?**
How much energy do we use?

- ▶ **COSTS?**
What does it cost us?

EXERCISE 3 Draw up an energy profile for your organisation

1. Start with one energy form, such as electricity, and follow through with the others so that the different uses and demands (when and how much) for each energy form are understood before going on to the next.
2. Compare the costs of different energy forms consumed.
3. Determine the significance of the total energy spend in relation to other key business activities.

An energy manager, if appointed, should be able to provide an energy use profile which answers all, or most, of the questions. If no energy manager is appointed, then it may be necessary to start with the accounts office and work back from energy invoices, bearing in mind that invoices often lag some months behind actual consumption.

Exercise 3 will help you to develop an energy use profile for your organisation.

Exercise 3 may give rise to more detailed questions, such as:

'how is the electricity demand split between department X and department Y?'

This sort of question may be difficult to answer quantitatively unless investment has been made in additional metering. Indeed, cost-effective extra metering may be one of the requirements you discover.

Base energy budget and avoidable waste

The total energy budget of an organisation comprises an unavoidable base budget for the energy consumed by all operations when working efficiently to meet business needs, and further expenditure on energy less efficiently used. The latter can be around 40% of the total energy budget, but is the proportion that must be tackled to achieve maximum efficiency.

Figure 4 gives an example of areas that may be responsible for the unnecessary energy use on a large estate.

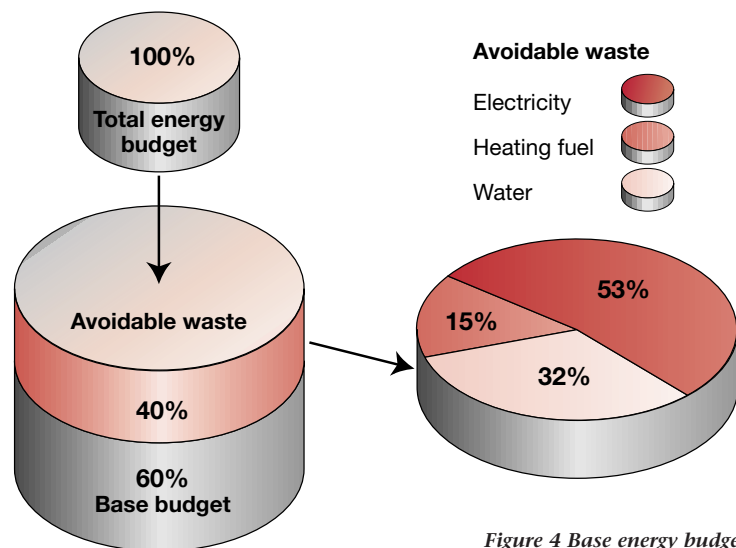
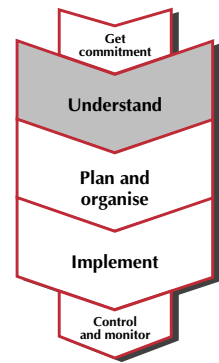


Figure 4 Base energy budget and avoidable waste



IN THIS CHAPTER:

- Gaining an understanding of the way energy is consumed by a site
- Quantifying and understanding consumption in terms of costs relative to other business costs
- Important considerations in estimating potential savings in energy
- Making a good business case for an energy management programme

GETTING STARTED

ESTIMATING POTENTIAL SAVINGS

- What would be the positive effect on the profit or service provision of the organisation if you were able to save 20% of energy costs, all other things being equal?
- How much more product/service would you have to sell to achieve the same level of profit increase?

The answers to these questions indicate the potential pay-off associated with improvements in energy management. They help to provide the underlying justification for action, although they will not tell you what is possible or how to achieve it.

Estimating potential requires a clear understanding of the energy use profile.

To illustrate this point, consider the heating, lighting and ventilation of an office building.

- Energy may be in more than one form (electricity, gas, coal, oil).
- The office may be occupied only from 9am to 6pm.
- Lighting may not be efficiently controlled.
- Air-conditioning may be needed in summer months.
- It may be normal to heat the whole building, even though occupancy levels vary considerably (eg Saturday morning, overtime working).
- Office equipment, such as computers and photocopiers, consume electricity and give off heat; some may be left on unnecessarily. New purchases may not yet be restricted to energy efficient units.

In short, demand for energy consumption in an office building will be influenced by individual behaviour, established working practices, building design and fabric and by external factors, such as climate.

The question 'what are the potential savings associated with this office building?' may be at first too simplistic. The energy costs associated with an office block are not usually significant in relation to other costs. However, it will usually be

worthwhile investigating energy costs, because meaningful savings can often be achieved cost-effectively. Generating an energy use profile focused on an office building can be the first step in this process.

The key to early success in energy and energy cost saving (which motivates more action) is to concentrate initially on the main energy users and start with easily accomplished and measured actions. Often, 80% of the energy used by an organisation is concentrated within just 20% of its total energy consuming activities.

PRESENTING A CASE FOR AN ENERGY MANAGEMENT PROGRAMME

In order to gain credibility and high level management attention and commitment, a case for an energy management programme must incorporate several key elements.

- **Timing.** It must fit in with current strategic needs of the business.
- **Benefit.** It must clearly illustrate benefits to the business.
- **Pathway.** It must show how and when benefits can be realised.
- **Choice.** It must provide clear choice and flexibility, as far as possible.
- **Resources.** It must state resources needed to implement the programme and the expected return on any required investment.

These elements normally form the basis of most senior management business decisions, and are not specific to the management of energy.

Making a case for an energy management programme will, therefore, require you to mobilise management resources in order to generate an energy use profile and to examine realistic and worthwhile savings options. You will need the input of key user representatives to help focus on particular energy consumption issues and provide the necessary data for consideration. Sometimes such a group can evolve into an energy committee (see Level 3 of the organising column in the energy management matrix).

5 STRATEGIC GOALS

SETTING GOALS FOR PERFORMANCE IMPROVEMENT

Modern competitive business demands continuous performance improvement. In the private sector, the fundamental imperative to improve profitability generally provides the driving force for change. The need to demonstrate improved service provision and value for taxpayers' money provides the same incentive in the public sector.

Delivering improvements in profitability or value for money relates to satisfying customer demand from available or reduced resources. Energy is one of those resources.

Setting goals for improvement of energy management performance must therefore be seen in the general context of improving overall business efficiency.

Using policy for goal setting

The energy policy is the appropriate place to set out the long term goals and medium term objectives of the organisation on energy management. GPG 186 gives detailed guidance on developing an energy policy and setting goals and objectives within that policy.

It is very important that policy goals on energy management are formulated to demonstrate a clear link to the basic strategy of continuous business improvement. The clearer the link, the stronger will be the endorsement and support from senior managers. Energy efficiency improvement will then be seen as one of the key factors supporting the business improvement strategy.

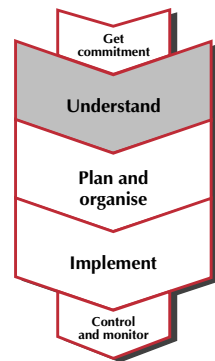
Energy in the context of environmental policy

Senior managers may sometimes choose to express their broad intentions or goals by giving a commitment to lessen any impact on the environment by reducing energy consumption.

In this case, it may be necessary to set medium term objectives and short term targets which reflect the importance of energy consumption (and costs) relative to other environmental matters that affect the organisation.

Aligning improvement objectives with the needs of the organisation

The strategy for business improvement will vary with time, depending on the circumstances of the organisation. Energy improvement objectives and targets may need similarly to be varied from time to time so that they remain in step with other organisational needs. The overall goals and direction set out in the policy should not normally need to be changed, but variations may affect the speed or timing of achieving those goals.



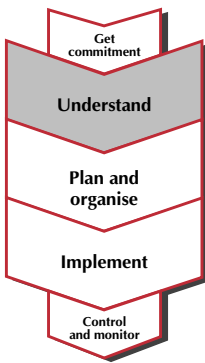
IN THIS CHAPTER:

- *Setting goals in the context of business improvement*
- *Using policy statements on energy or environmental performance as a basis for setting energy improvement objectives and targets*
- *Ensuring that improvement objectives are strategically aligned with the needs of the organisation, and are achievable within resource constraints*

ACTION POINTS

- Check energy and/or environmental policy for the organisation as a whole and extract any firm goals or objectives. Reformulate as necessary for local site application.
- Obtain information on energy spend and consumption from accounts and/or energy manager, bearing in mind that the spend information may lag consumption by several months, and may be distorted by tariff agreements etc.
- Discuss energy target setting in general terms with key senior managers, especially managers of user departments, to obtain feedback on the way improvement objectives and targets should be formulated to support other business objectives.

6 STAKEHOLDERS IN ENERGY EFFICIENCY



IN THIS CHAPTER:

- *Identifying all stakeholders who have an interest in the efficiency with which energy is used*
- *Identifying and satisfying stakeholders needs*

WHO ARE THE STAKEHOLDERS IN ENERGY EFFICIENCY?

Stakeholders are individuals, groups of individuals or other organisations having an interest in your organisation and the efficiency with which you manage your energy consumption. Stakeholders can be internal or external to your organisation and may have many varied interests.

- **Internal stakeholders:** employees, managers and owners.
- **External stakeholders:** shareholders (owners), neighbours, customers, energy suppliers, employees’ dependants, regulators, the government, employee representatives such as unions, and non-governmental organisations (NGOs), such as environmental pressure groups.

Why are stakeholders’ interests important?

Stakeholders may directly or indirectly influence the fortunes and reputation of the organisation. Internal stakeholders can affect the success or failure of your energy management initiatives. It is therefore important that an organisation learns to identify the needs of different stakeholders and to address them in an energy management context.

REPORTING RESULTS FOR STAKEHOLDER SATISFACTION

Stakeholders will expect the company to demonstrate that their interests are being met by its actions and by timely, accurate and relevant information.

External stakeholders

Reporting may be via the company annual accounts or other relevant publications, such as an environmental statement, or occasional press releases.

Important components which should be considered for inclusion in reports to external stakeholders include:

- information on energy consumption, trends and explanations
- a statement or reaffirmation of the company’s policy with respect to energy consumption, perhaps in the context of environmental commitments
- specific examples of programmes undertaken to improve energy management and their degree of success, or reasons for failure
- firm plans for the future to further enhance energy management.

Internal stakeholders

Internal stakeholders require much more frequent updating on the drive to energy efficiency. They may be involved themselves in initiatives and action programmes designed to achieve objectives and targets. They will want to see measurable progress in target attainment and see recognition of the importance of their contribution by top management.

EXERCISE 4 Identifying your stakeholders, their needs and their importance

- Organise a workshop involving a group of say, 10 or 12 participants drawn from a cross-section of managers and supervisors. Use the method and table in Appendix A (page 21) to identify your internal and external stakeholders and their needs.
- Extract the identified information needs of your important stakeholders and ask yourself how you are currently satisfying those needs.

7 SETTING OBJECTIVES AND TARGETS

SETTING ACHIEVABLE OBJECTIVES AND TARGETS

Objectives can only be established by adopting a realistic approach to what is achievable with the available resources. The targets to achieve these objectives should relate to existing energy consumption and must be measurable.

Saving energy is not the sole responsibility of the energy manager. It requires a contribution from all energy users. Asking users to achieve energy savings in turn calls for regular feedback about energy consumption. Monitoring systems should ideally provide energy consumption and cost data area by area, but the data will need to be processed by the energy manager, so that it is easily understood by less technical energy users.

Identifying, coordinating and ‘owning’ energy saving projects should, overall, be the responsibility of an energy committee or working group. Just as it requires a team effort to define and agree realistic objectives and targets, so it also needs team support and ownership of the projects to provide a platform from which to launch and roll them out.

Calculating costs and benefits

Business managers are familiar with balancing proposed investment against anticipated gain and associated risks. A case for investment in energy improvement is expected to address these key factors in a way that makes good business sense, and in a language understood by non-technical management. Involving financial managers in building the case for energy management improvement lends great strength and credibility to proposals. Financial managers can assist both in calculating costs and in presenting the benefits in the most appropriate business terms:

- by expressing risks and costs in a realistic but positive way
- by showing the expected return on capital investments
- by quantifying benefits in financial terms, particularly if the benefits are aimed at a reduction in costs
- by relating benefits expressed in financial terms to other company strategic goals.

Early projects

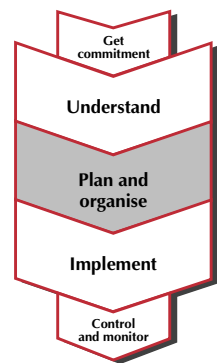
Targets based on no-cost or low-cost projects which result in cost savings are usually regarded as the ‘low hanging fruit’ of an energy efficiency improvement programme. They should be the first to be set and achieved. Their successful outcome will add credibility to higher cost projects, particularly if benefits and savings are identified and properly publicised within the organisation.

Energy purchasing and spending policy

Deregulation in the energy industry has created opportunities to negotiate favourable terms for the purchase of energy, and companies should take full advantage of this opportunity. However, cost savings based on supply contract negotiations alone may be a feature of transient market conditions and could lead to false impressions of improved energy efficiency.

Keeping senior management commitment

Maintaining support once projects are underway will depend on senior managers receiving regular progress briefings. This will remind everyone of the targets and objectives, clearly stating what has been achieved, and thus helping to ensure ongoing commitment.



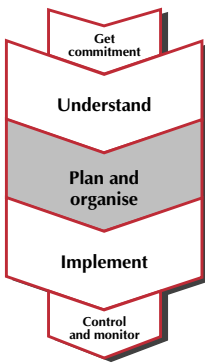
IN THIS CHAPTER:

- Objectives, targets and preparing good business cases
- Early low-cost projects to pave the way
- Ensuring on-going support

ACTION POINTS

- Discuss with your financial department the ‘ground rules’ for presenting a capital expenditure project proposal, including the normal return on investment.
- Prepare meaningful objectives and targets which conform with the financial advice.
- Keep senior management and all relevant staff advised of results.

8 ACTION PLANNING



IN THIS CHAPTER:

- *Simple action planning*
- *Linking action plan objectives to company policy*
- *Progress reporting for the board*

Simple action planning

The starting point for most action plans is a simple list of tasks, with allocated responsibilities and deadlines. Complicated projects require a higher level of sophistication in planning, but these can always be broken down into phases, which in turn can be reduced to task lists.

The first ingredient in action planning is to provide clear written objectives. Targets to achieve these objectives must be agreed in consultation with those who are allocated responsibility for achieving them. The consultation must provide adequate opportunity for the discussion of reporting and resource requirements.

It is the responsibility of the project manager to ensure that resource requirements are identified and acceptable at the project planning stage and provided at the appropriate stage of the project.

Budget approval and timing

Where a project manager identifies the need for additional resources, it will be necessary to make a justifiable and timely application for budget allocation and approval. This will be the case particularly where capital expenditure forms part of a project requirement.

It may be necessary for such projects to go through a briefing stage involving members of the energy committee and a financial manager.

Action plans at work

The action plan format outlined above will be familiar to most managers. It shows, furthermore, that project management of energy projects is no different from other projects. This means that energy projects can be integrated into the general management system.

Progress reporting

It is usual for a group to review project progress on a regular basis. This group can be the energy committee or, in the case of larger projects, the project coordinator may regularly call together people with key responsibilities from within that project to review progress.

A summary of progress should be provided to the board for review regularly (eg annually or six-monthly, depending on the needs of the company). The person to provide the summary should be the board member with special responsibility for energy matters. This regular review is probably the single most important role which the main board can play in ensuring that the organisation of energy management is developed to its full potential.

ACTION POINTS

- Find out and list four improvement projects currently being actioned in your organisation (not necessarily associated with energy or environment).
- Meet with the project leader or coordinate and discuss/obtain:
 - written programme objectives and targets
 - documented roles and responsibilities
 - tasking and deadlines
 - method and extent of progress reporting.
- Compare with the recommendations of this section and note any differences and special features associated with project management in your organisation.

ACTION PLANNING

ILLUSTRATION OF A SIMPLE ACTION PLAN

Project aim: to set targets for reduced energy consumption in a particular department based on an inventory of office equipment in use in the department.

Project manager: Mr John Smythe, Energy Manager

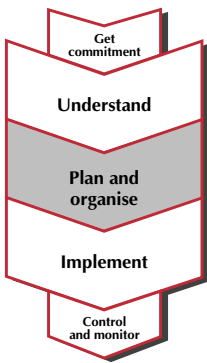
- Phase 1** Obtain/generate inventory of key office equipment, such as PCs, printers, photocopiers, fax machines, showing nameplate (nominal) electrical rating and hours per week usage.
- Phase 2** Itemise ancillary equipment which uses electricity (such as strip lighting, drinks vending machines, ventilation fans, convector heaters, kitchen equipment etc) with nameplate (nominal) rating and estimated hours per week usage.
- Phase 3** Calculate electricity consumption figures for the equipment listed in Phases 1 and 2 and scale up to an annual estimate, making allowances for holiday closures and realistic average power demand. Normalise consumption figures by taking account of floor area, day temperatures and occupancy levels.
- Phase 4** Determine wasted energy and set targets for future improvement. Prepare results in a short presentation format illustrating the energy significance of office equipment and ancillary equipment and present the findings to the employees of V-block and also the energy committee.

Phase 1 – completion deadline 31 January

Task	Person	Deadline	OK?
1. Prepare standard inventory list in spreadsheet format and copy for each office area. NB Check existing inventory under Electricity at Work Regulations.	John Smythe + secretary Safety manager	Jan 10	
2. Kick-off meeting to explain objectives to V-block office managers and agree the programme of work. Hand out inventory lists.	John Smythe	Jan 11	
3. Office managers to appoint inventory compiler for each office and explain purpose.	Office managers	Jan 15	
4. Compilers to systematically gather data for inventory and enter in spreadsheet.	Office compilers	Jan 25	
5. Compilers to provide inventories to office managers.	Office compilers	Jan 26	
6. Office managers to carry out inventory check and send to Mr Smythe.	Office managers	Jan 31	

Other phases will be dealt with in a similar way.

9 ROLES AND RESPONSIBILITIES



IN THIS CHAPTER:

- Identifying key roles and responsibilities in energy management
- Highlighting gaps in the current assignment of responsibilities and roles
- Using gap analysis to point out the actions needed to move up the organisation column of the energy management matrix
- Ways of anchoring and integrating the management of energy efficiency via user budgets, and performance reward schemes

MAPPING THE EXISTING ORGANISATION

Exercise 1 in Chapter 3 will have provided some indication of your current energy management organisation. In order to improve, it will be necessary to identify:

- people in the company who have responsibilities for energy management in some form
- those parts of the company which use energy
- the main activities which account for energy consumption
- gaps in the allocation of energy management responsibilities.

Energy management functions

The chief executive officer, production directors, production unit managers and similar staff all have responsibilities for energy management. However, energy management is not their prime function. In contrast, the following staff have a direct impact on energy management:

- maintenance manager
- energy manager or site facilities manager
- head of energy committee
- contract and purchasing managers.

It is essential to identify the key players in energy management so that their respective inputs can be sought in setting and achieving improvement targets.

Energy accountable centres

Some organisations establish energy accountable centres. In its simplest form, this means allocating energy budgets to individual departments and

requiring them to operate within their allocated budget and achieve agreed efficiency targets.

The practicality of this will depend heavily on the ability to measure local energy consumption. Accountable centres require consumption information and direct control of the energy consumed.

In turn, investment in energy information systems, such as computer logging or metering, will need to be balanced against the potential benefit from units being given more direct control over their energy consumption.

In the early stages of energy management development, it may be sufficient to raise the awareness of key energy users by ensuring they are informed regularly of their relative contribution to energy consumption for the business as a whole. This must be followed through with gaining their acceptance of responsibility for working towards attaining greater energy efficiency.

Identifying gaps and overlaps

Once the key users have been identified and listed, it should be possible to identify the gaps and overlaps which exist in the organisation. Try Exercise 6 (page 17) and note any key roles which are not being adequately covered.

Assigning roles and responsibilities

The gaps identified by Exercise 6 will provide a basis for a review of your energy management organisation. Moving to the top of the organising column of the energy management matrix will involve assigning responsibilities and roles to people in your organisation. Since this may be a senior management function it may need to be reviewed and implemented at a high level in the organisation.

Energy management and job descriptions

Incorporating energy management in written job descriptions formalises the organisation's expectations of individual staff, and can be included in personal performance appraisals.

User group	Main activities	Energy form used
Sales ■ Internal ■ Order processing Manager: Mr Jones	Clerical ■ Filing ■ Computer work Office 8.45-16.30h	Electricity ■ Lighting ■ Ventilation ■ Office equipment Gas ■ Office heating

EXERCISE 5 Mapping energy user groups

Using the table format shown above, list the main energy user groups in your organisation.

ROLES AND RESPONSIBILITIES

Rewarding excellence in energy management

Active contributions to excellence, especially where team effort has been involved, should also be recognised in non-financial ways, such as internal publicity and achievement awards. These can strengthen the organisational team spirit, and help market the energy management message.

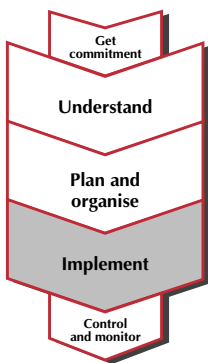
Reminding employees that improvements in energy efficiency are also rewardable elements of existing company suggestion schemes can assist in integrating energy into mainstream thinking in the company.

EXERCISE 6 Gap analysis - roles and responsibilities

1. In the table below, link the titles and roles/responsibilities to named individuals in your organisation. (Exact titles are less important than the roles behind those titles.)
2. Link the roles with titles using pencil lines. Highlight any roles or responsibilities which do not appear to be allocated.
3. Add to roles and modify titles as needed. Delete any non-applicable ones.
4. Using the Roles and Responsibilities Matrix shown in Appendix B, restate the information in a way which reflects the current circumstances in your organisation and check its validity with the people identified. Note that responsibilities for some roles may be shared or split between authorising, performing, supporting/advising and overall responsibility.

Job title	Name of individuals	Role/responsibility
■ Chief executive		1. Managing distribution of energy
■ Finance director		2. Defining energy policy
■ Purchasing manager		3. Capital equipment purchase
■ Production director		4. New building construction
■ Production unit manager		5. Setting energy savings targets
■ Energy manager		6. Leading energy improvement project
■ Public relations manager		7. Reporting to the board regularly on energy efficiency and costs
■ Training director		8. Developing project plans for reducing energy waste
■ Board member		9. Monitoring progress on energy improvement projects
■ Sales manager		10. Negotiating with energy suppliers
■ Site services manager		11. Reviewing energy usage and costs on an annual basis for the business
■ Personnel manager		12. Ensuring that machinery and equipment is shut off when not being used
■ Maintenance manager		13. Reviewing capital expenditure plans for energy efficiency aspects
■ Engineering director		14. Collecting and distributing energy consumption information
■ Fleet manager		15. Member of energy committee
■ Production planning manager		16. Management of major energy user department X
■ Project manager		17. Reporting to the public and other stakeholders on energy management performance
		18. Informing employees about energy efficiency
		19. Running the boiler house
		20. Purchasing energy efficient equipment
		21. Incorporating energy efficient aspects in projects
		22. Improving process energy efficiency

10 INTEGRATING INTO EVERYDAY MANAGEMENT



IN THIS CHAPTER:

- *Benefits of integrating energy management with other management systems*
- *Adding value to other management initiatives, such as environmental management and major capital investment projects*

Aligning energy management with other programmes

A rapidly changing business environment requires managers and other employees to be flexible in their approach to work. Increasingly, the attainment of business objectives requires multi-disciplinary task forces in which traditional lines of responsibility and hierarchy become redrawn.

Today, employees often work in parallel on several management initiatives, and participate in numerous working groups and task forces. For this reason, the creation of a working group or energy committee and the development of energy related projects and action plans should not be viewed as out of the ordinary. Indeed, other groups working on different initiatives may be motivated and assisted by having a focus and centre of excellence for energy matters to whom they can turn for assistance.

Energy management should be integrated into the everyday business functions of all departments in ways that suit their operations – purchasing, accounts, personnel etc. New activities and business expansion offer a particularly good opportunity for this.

Environmental management systems

A measure of the level of integration may be regarded as the extent to which the roles and accountabilities of an energy manager are shared

between a number of different managers, or the extent to which an energy manager is able to take on broader responsibilities in other areas such as environmental management.

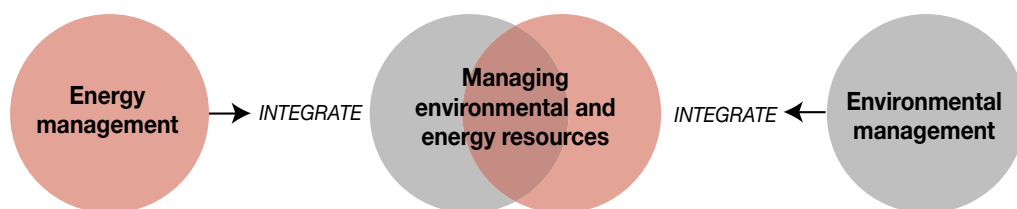
Modern environmental management systems standards such as BS 7750, EMAS and ISO 14001 recognise the role of energy efficiency in ‘completing the picture’ of integrated environmental management.

Organisations which adopt these standards are taking the first steps towards making energy management a central feature of their thinking, alongside key issues such as waste management, conservation of resources and minimisation of emissions and discharges to the environment.

Advantages and disadvantages of integration

It may be argued that, the more energy management effort becomes integrated with other management schemes, the more difficult it will become to attract senior management attention specifically for energy issues.

This is not a good reason for avoiding integration - an isolationist approach to energy management is more likely to marginalise energy issues in the face of other important priorities.



11 NEXT STEPS

IMPLEMENT THE MANAGEMENT PROGRAMME

There is much to be said for developing the 'organising' column of the energy management matrix ahead of all other columns, for it is the management organisation which will put the policy into effect.

Ensure that key parts of the management organisation are in place before announcing improvement goals and targets. Demonstrate commitment by naming the board member, or senior site-based representative, who will take special responsibility for energy management and the management programme.

Maximising impact and effectiveness

Employees will expect to receive key commitment signals from the highest level of the organisation:

- overall goals and objectives for the next five years
- targets for the first 12 months
- names of local managers, such as the composition of an energy committee, who are involved with the goals and charged with driving the programme forward.

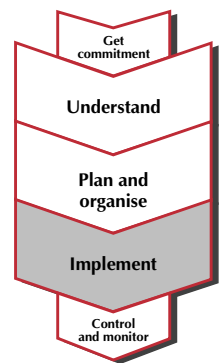
Any individual initiative to improve energy efficiency can be launched in a variety of ways. Consider the culture of the company and then choose the method which will have the most impact and effectiveness.

Communicating success

Communicating success acts as a motivating force and a demonstration of ongoing senior management commitment. Use it to enhance understanding of the company policy, and to anchor energy management in the minds of all employees.

- Regularly communicate project successes in the name of the board member who has taken special responsibility for energy matters.
- Describe the ongoing work of the energy committee.
- Take all opportunities to publicly highlight special efforts of particular individual employees and groups.

Do not permanently neglect one stakeholder group, such as external stakeholders, in favour of another, such as employees.



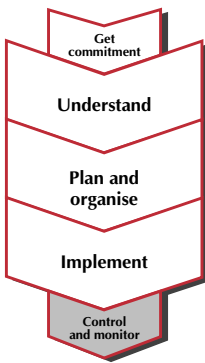
IN THIS CHAPTER:

- *Benefits of having a well-defined energy management organisation in place prior to launching energy improvement initiatives*
- *The need for clearly stated goals and a focal point for energy management*
- *Communicating success in energy projects to motivate people and anchor the energy management organisation*

ACTION POINTS

- Draw up a list of the key obstacles you consider are hindering development of an integrated and effective energy management organisation in your business.
- For each obstacle, write down two actions needed to remove or circumvent it, and the names of people who could help you achieve those actions.
- Take a fresh look at your improvement objectives and check whether they are over ambitious or realistic in the light of the obstacles you have identified. Reformulate the objectives and targets appropriately.
- Set a firm date and consider what progress you will wish to announce to which stakeholders. Plan how you wish to make the announcement.

12 KEEPING CONTROL



IN THIS CHAPTER:

- *Regular progress reviews of energy management are needed in the face of changing business priorities*
- *Auditing the energy management system as an improvement tool and a means of assuring quality of information*
- *Continual improvement in the context of multi-site companies*

The need for checks and balances

Once the improvement programme has been started and projects are underway, it is important to carry out regular reviews which enable progress reporting and adjustments to the objectives, targets and deadlines in the light of changing priorities and circumstances.

Additionally, maintenance of any installed technical measures should be undertaken to realise the anticipated savings. Appropriate funding needs to be budgeted to ensure that these investments are properly maintained.

In early stages, progress in one area may enable progress in another area to be enhanced or new projects to be formulated (eg investments in energy metering systems may provide the means for efficiency improvements for that particular area). External factors, such as changes in fuel prices or the need to accommodate production lines, may

alter the priority of energy improvement projects, just as they can with other types of management initiative.

Use of independent auditors ensures the reliability of energy consumption data. This may be important for both progress reporting and publishing information on energy consumption, for example, under the Eco-Management and Audit Scheme (EMAS).

Striving for continuous improvement

Early successes, achieved by exploiting the ‘low hanging fruit’ of low-cost and no-cost opportunities, may be multiplied across an organisation by communicating one site’s successes and using these to motivate groups trying to achieve success on other sites. Grasp opportunities to transfer success and know-how in energy management techniques across multi-site companies.

ACTION POINTS

Assuming the role of the board member responsible for energy efficiency.

- Write down what information you expect to receive in order to be able to report regularly on progress to your identified stakeholders.
- For each of the information requirements, identify who will provide this information.
- Consider how you will judge whether the information/data is reliable.
- Check on current methods of quality assurance auditing in your business and discuss your information and reliability needs with any QA manager.
- Find out how energy efficiency is being managed on other sites in your group.

THE ENERGY MANAGEMENT MATRIX

Level	Energy policy	Organising	Motivation	Information systems	Marketing	Investment
4	Energy policy, action plan and regular review have commitment of top management as part of an environmental strategy	Energy management fully integrated into management structure. Clear delegation of responsibility for energy consumption	Formal and informal channels of communication regularly exploited by energy manager and energy staff at all levels	Comprehensive system sets targets, monitors consumption, identifies faults, quantifies savings and provides budget tracking	Marketing the value of energy efficiency and the performance of energy management both within the organisation and outside it	Positive discrimination in favour of 'green' schemes with detailed investment appraisal of all new-build and refurbishment opportunities
3	Formal energy policy but no active commitment from top management	Energy manager accountable to energy committee representing all users, chaired by a member of the managing board	Energy committee used as main channel together with direct contact with major users	M&T reports for individual premises based on sub-metering, but savings not reported effectively to users	Programme of staff awareness and regular publicity campaigns	Same pay back criteria employed as for all other investment
2	Unadopted energy policy set by energy manager or senior departmental manager	Energy manager in post, reporting to ad-hoc committee, but line management and authority are unclear	Contact with major users through ad-hoc committee chaired by senior departmental manager	Monitoring and targeting reports based on supply meter data. Energy unit has ad-hoc involvement in budget setting	Some ad-hoc staff awareness training	Investment using short term pay back criteria only
1	An unwritten set of guidelines	Energy management the part-time responsibility of someone with only limited authority or influence	Informal contacts between engineer and a few users	Cost reporting based on invoice data. Engineer compiles reports for internal use within technical department	Informal contacts used to promote energy efficiency	Only low cost measures taken
0	No explicit policy	No energy management or any formal delegation of responsibility for energy consumption	No contact with users	No information system. No accounting for energy consumption	No promotion of energy efficiency	No investment in increasing energy efficiency in premises

The Government's Energy Efficiency Best Practice programme provides impartial, authoritative information on energy efficiency techniques and technologies in industry and buildings. This information is disseminated through publications, videos and software, together with seminars, workshops and other events. Publications within the Best Practice programme are shown opposite.

Visit the website at www.energy-efficiency.gov.uk
Call the Environment and Energy Helpline on **0800 585794**

For further specific information on:

Buildings-related projects contact:
Enquiries Bureau

BRECSU

BRE
Garston, Watford WD25 9XX
Tel 01923 664258
Fax 01923 664787
E-mail brecsuenq@bre.co.uk

Industrial projects contact:
Energy Efficiency Enquiries Bureau

ETSU

Harwell, Oxfordshire
OX11 0RA
Tel 01235 436747
Fax 01235 433066
E-mail etsuenq@aeat.co.uk

Energy Consumption Guides: compare energy use in specific processes, operations, plant and building types.

Good Practice: promotes proven energy-efficient techniques through Guides and Case Studies.

New Practice: monitors first commercial applications of new energy efficiency measures.

Future Practice: reports on joint R&D ventures into new energy efficiency measures.

General Information: describes concepts and approaches yet to be fully established as good practice.

Fuel Efficiency Booklets: give detailed information on specific technologies and techniques.

Introduction to Energy Efficiency: helps new energy managers understand the use and costs of heating, lighting, etc.