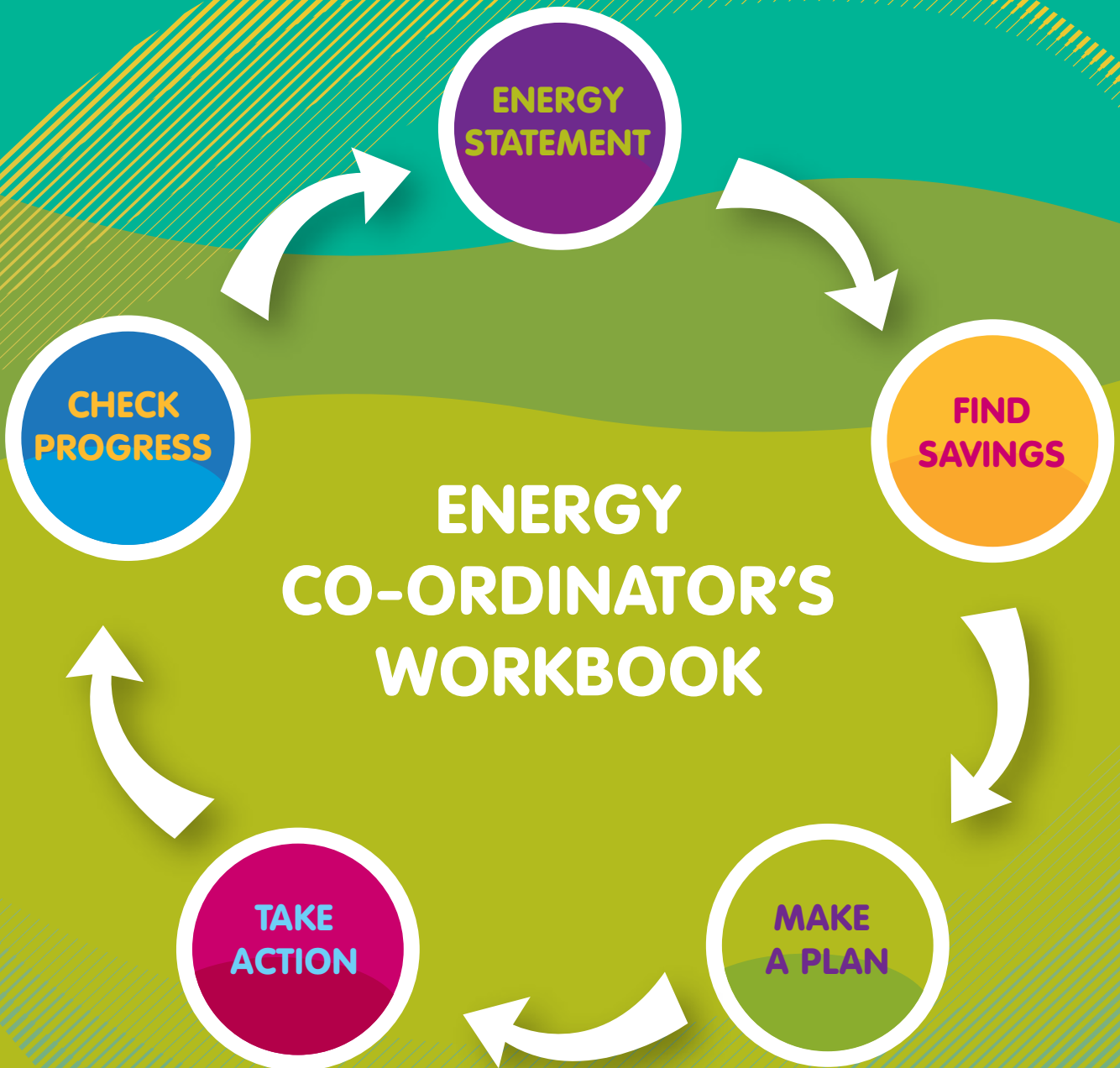


energy **in** education

energy management guide for schools



This workbook is part of the Energy in Education pack designed to help school boards of management, principals, teachers, administrators, caretaking staff, pupils and parents to improve energy use practices and to reduce school operating costs while helping to protect the environment for future generations. It is designed for use in conjunction with the energy management guide, which outlines a five step process to assist you with effective energy management in your school. The Energy in Education website at www.energyneducation.ie provides a wide range of additional support material and detailed advice on specific topics such as lighting, heating, IT equipment, water conservation and renewables in schools; and school energy saving case studies. A pupil energy logbook has also been developed and the icon below denotes opportunities for pupil involvement in energy management.

The icon consists of a purple rounded square with the text 'get pupils involved' in white. To the right of the square are three overlapping rectangular shapes in yellow, orange, and red, suggesting a stack of pages or a dynamic element.

Involve pupils in the energy management process



Opportunities to integrate with the Green-Schools energy theme

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School details

Fill in your details below to personalise your workbook, which will serve as your school's Energy Management record and allow you to track progress. You may not have all the details now, so just fill in what you can at the beginning.

Name

Position

School

Contact number

Roll number

Contact address

Email (optional)

Start date
(of period for which you
are using this workbook)

Finish date

Number of staff

Number of pupils

Current energy supplier(s)

Energy type	Supplier	Account manager (if known)	Contact number
Electricity			
Heating			
Other (please specify)			

Annual energy costs (academic year)(€/yr)

Area of school (m²)

What is the rating (A-G) on your school's Display Energy Certificate (DEC)?
See guide or visit www.energyineducation.ie for more information.

Annual energy usage (kWh/yr)
This is a measure of energy use over a year (kWh or kilowatt hour is a unit of energy).

Questionnaire - Where are we now?

Answer these questions to help you assess your current situation in relation to energy management. Make a photocopy of this form, as ideally it should be completed in 12 month's time and the answers compared.

(If an effective energy management system is in place, most of your answers will be in the boxes on the right.)

Has a Coordinator been appointed to manage the Energy Management Programme?

- No Informal appointment Formal appointment

Additional comments:

Is there an Energy Statement?

- No Yes, a formal, written, statement

Additional comments:

Have you identified significant energy users and factors that influence energy consumption?

- No Yes, but energy use has not been quantified Yes, and some quantification of energy use has taken place Yes, a full assessment has been undertaken

Additional comments:

Is there an Energy Action Plan in place?

- No (none) Unwritten plan Written plan Written plan which has been implemented

Additional comments:

Are energy efficient practices and energy awareness promoted amongst staff?

- Not at all Sometimes Formally and regularly

Additional comments:

Is there an energy measurement and monitoring system in place?

- No Some informal monitoring Formal system

Additional comments:

Conclusions:

Making the case for energy management at your school

How much could we save? The table below will help you to estimate the money the school could save through energy management measures. This will help you to demonstrate the benefits of investing resources and effort in implementing energy management.

How to fill in this table

1. Record your total annual energy costs (from previous year's bills).
2. Calculate the value of 5% energy savings that can be made through 'good housekeeping'.
3. Calculate the value of 10% energy savings that can be made through modest building improvements.
4. Calculate the value of 25% energy savings that can be made through medium-cost capital investments.
5. Calculate how many computers (or other equipment) the school could buy with the maximum savings made over three years.

Financial indicators

1. Total annual energy cost	
2. 5% Energy savings	
3. 10% Energy savings	
4. 25 % Energy savings	
5. Number of new PCs, assuming 10% savings for three years	

How do these savings compare to the amounts raised through fundraising by the school last year?

Conclusions

Why should our school save energy? What will drive our campaign?

1.

2.

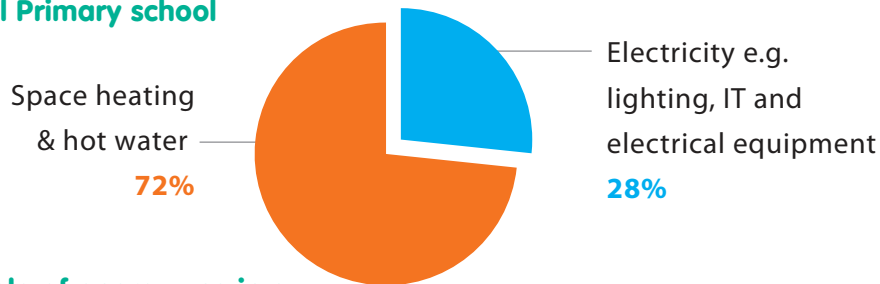
3.

4.

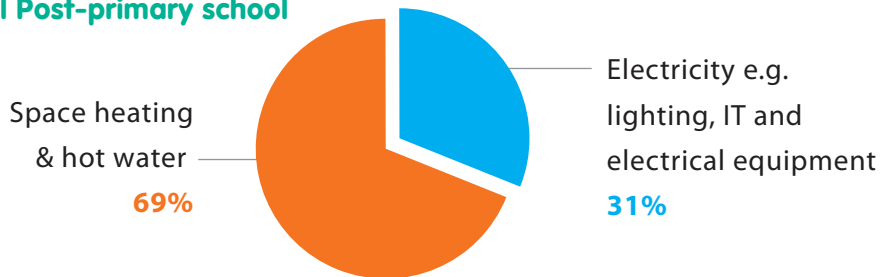
Where does the energy go in an average school?

Energy use will vary a lot from school to school but the following pie charts illustrate that in general the main energy users are heating, lighting and hot water.

Example of energy use in a typical Primary school



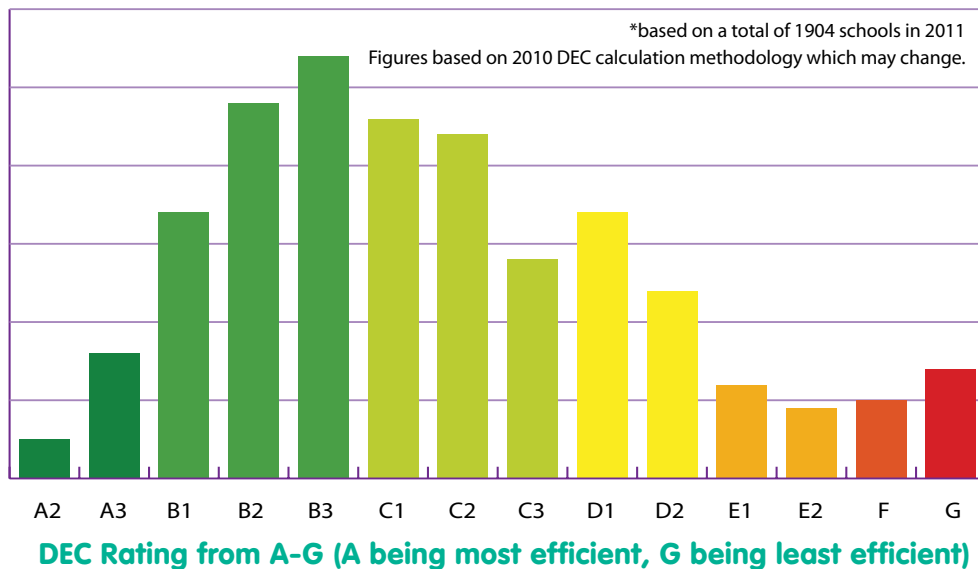
Example of energy use in a typical Post-primary school



How much energy are schools using?

There are no hard and fast rules and many factors such as the age of the building and the energy management practices will influence energy consumption. If you have a Display Energy Certificate (DEC) you will have information on the energy rating of your school. If not, you can apply on line at www.energyineducation.ie/Display_Energy_Certificate once you know your energy use for a recent 12 month period and the area of your school (why not use the information you record on your energy bills in this workbook and tips on measuring the area of a school, available on the website?)

DEC ratings of Irish Schools* – how does your school's DEC compare?



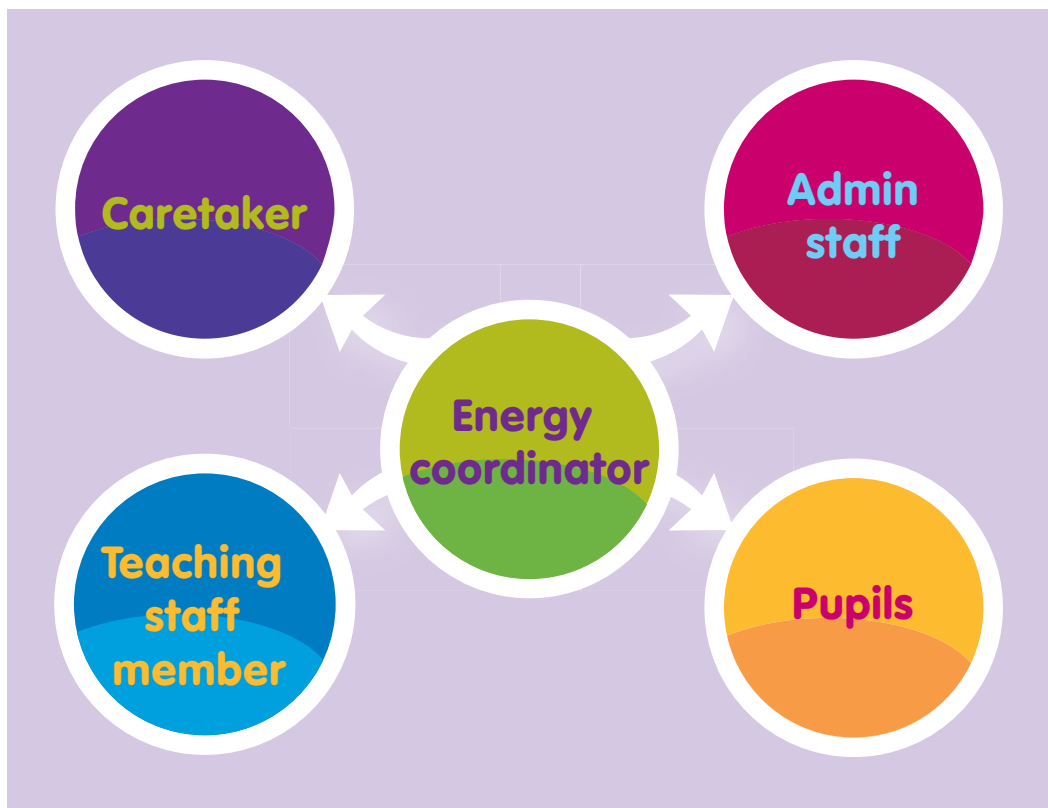
1.
**ENERGY
STATEMENT**

Step 1 Energy Statement

Assign an Energy Coordinator for your school.

Name of energy coordinator	Position

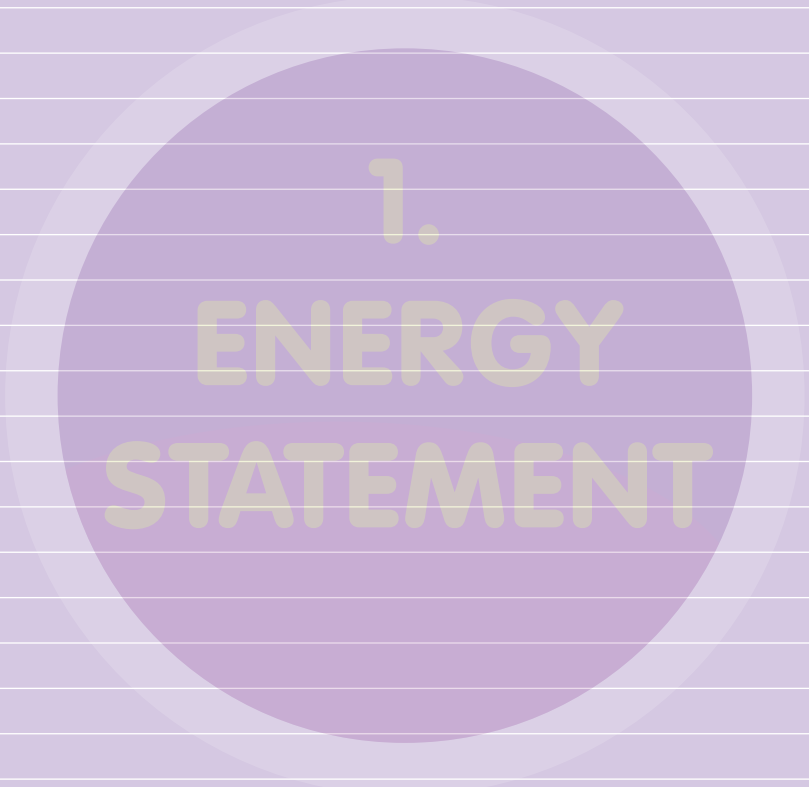
Energy Team



Energy team members

Write an energy statement for your school (see example page 7 of guide).

School energy statement



1.
**ENERGY
STATEMENT**

TIPS

- ➔ Don't hide away your energy statement, communicate it to staff at meetings and display it prominently in the school.
- ➔ Inform parents of the new energy policy through newsletters or a note and consider involving interested parents in the energy management process.
- ➔ You can download a template for your energy statement to complete and display at www.energyineducation.ie/Energy_Management_Getting_Started

2.
**FIND
SAVINGS**

Step 2 Finding Savings

Document energy bills and take meter readings to determine your energy usage and costs. Try to record all your energy bills in kWh for consistency. Conversion factors for different fuels are often on your bill and are available online at www.energyneducation.ie/Measure_Energy_Use, where you can also download a bill tracking tool.

Your electricity bills

If you have multiple buildings with different billing periods you can make copies of these tables. If your bills are estimated contact your supplier with a meter reading to find out real consumption figures.

Previous academic year:

Billing Period	Quantity Billed (Units) kWh	Total Cost (€)
Total		

Current academic year:

Billing Period	Quantity Billed (Units) kWh	Total Cost (€)
Total (To Date)		

Your heating bills

Type of Fuel (e.g. natural gas)

Previous academic year:

Billing Period	Quantity Billed (Units) kWh	Total Cost (€)
Total		

Current academic year:

Billing Period	Quantity Billed (Units) kWh	Total Cost (€)
Total (To Date)		

Meter readings - Gas

Date	Reading	Units used since previous reading	kWh used
Total (to date)			

Meter readings - Water

Date	Reading	Litres used since previous reading
Total (to date)		

Action



Pupils can assist with taking meter readings from electricity/gas meters and recording details from bills (see pupil logbook)

Energy users and influences

Identify energy-using equipment (lights, computers, heaters, kettle, dishwasher), the people who use it and if there are possible savings (you may need extra copies of this sheet). You can download this table at www.energyineducation.ie/Energy_Management_Getting_Started

Where	Appliance	How many	Hours on per day	Influential factors	Who is responsible	Savings opportunity?	(Optional) Energy rating (kW) you will find this on nameplate on appliance	(Optional) Energy value (kWh) for 1 day Energy rating x quantity x hours of usage
2. FIND SAVINGS								



Action

Pupils can assist with counting and recording energy using equipment (see pupil logbook)



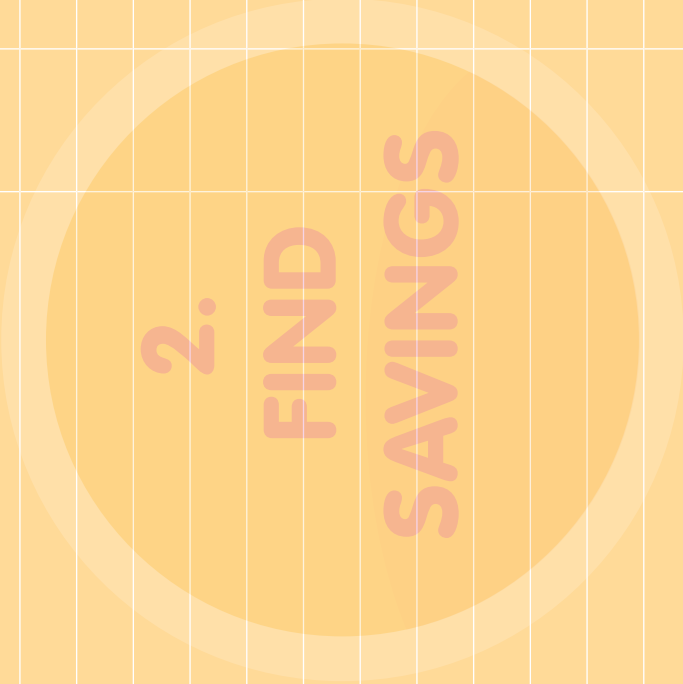
Action

Environmental review of energy or energy audit (consult your Green-Schools energy handbook)

List of opportunities

Start to fill out your list of opportunities to save energy and include opportunities in various areas. This should be a 'living' document, which can be added to at any stage during the process. You can download this table at www.energyineducation.ie/Energy_Management_Getting_Started. Any ideas/suggestions should be captured here.

Ref	Aspect (e.g. lighting) or Area (e.g. zone 1 / classroom/canteen)	Opportunity	Cost	Comment
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				



Action

Pupils can assist with counting and recording energy using equipment (see pupil logbook)

**4.
TAKE
ACTION**

Step 4 Take Action

Implement housekeeping and Energy Action Plan.

Maintenance checklist

Establish your housekeeping and maintenance checklist below. Think about what should be turned off and when. You may want to leave an individual checklist for particular pieces of equipment or in certain areas of the school. Labels can be useful reminders. You can download this table at

www.energineducation.ie/Energy_Management_Getting_Started

Area	Task	Check Frequency	Person Responsible	Training Required?	Achieved?

Step 5 Check Progress

Energy management annual progress review

Reviewing your progress each year allows you to benchmark success and should inform your plans for the coming year. You can start by completing the questionnaire on page two again to re-assess the school's position overall in relation to energy management. You can then review the situation in more detail using the checklists and tables in this section.

1. Has the school recorded savings in energy cost since using this energy management guide?

Yes

No

If yes, please detail

2. Does the energy team have the full support of the school management?

Yes

No

3. Have you communicated your energy statement to all staff members?

Yes

No

Describe how

4. What projects have been carried out during this cycle of energy management?

5. Which objectives have been achieved from the energy action plan?

6. Of these targets, how many have been achieved within their timeframe?

7. Have you started running an energy awareness campaign?

Yes

No

If yes, please detail

8. Have you noticed a change in attitude to energy waste?

Yes

No

If yes, please detail

9. Have you made a list of recommendations for the ongoing plan for energy efficiency?

Yes

No

10. Have you investigated the range of grants that are available from Department of Education and Skills/ SEAI?

Yes

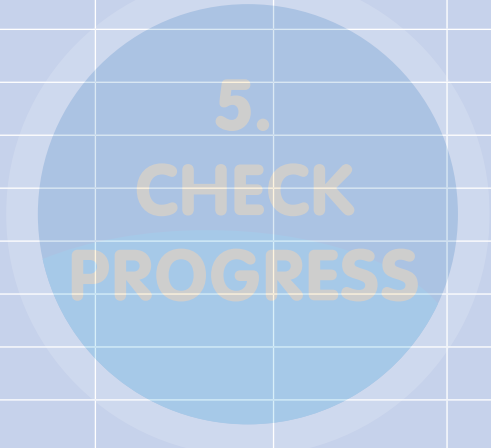
No

If yes, please detail

Annual performance comparison progress table

Review your school's annual performance and plan for future work by filling in the tables below.

Date <small>(Try to do this to tie in with your energy bills)</small>	Comparison 1 Electricity Use kWh/m ²	Comparison 2 Gas Use kWh/m ²	Comparison 3	Comparison 4



Most recent Display Energy Certificate rating

Previous Display Energy Certificate rating

Future Recommendations

Based on the energy management annual progress review (step 5) outline a list of suggestions as to how to improve on the energy management programme for next year.



the 1990s, the number of people who are employed in the service sector has increased in all countries. The increase is most pronounced in the United States, where the service sector has become the dominant sector of the economy. In the Netherlands, the service sector has also become the dominant sector, but the increase is less pronounced than in the United States.

The increase in the service sector is due to a number of factors. One of the main factors is the increase in the number of people who are employed in the service sector. This is due to a number of factors, including the increase in the number of people who are employed in the service sector. This is due to a number of factors, including the increase in the number of people who are employed in the service sector.

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Ireland's EU Structural Funds
Programmes 2007 - 2013

Co-funded by the Irish Government
and the European Union



EUROPEAN UNION
STRUCTURAL FUNDS

The Sustainable Energy Authority of Ireland is partly financed by Ireland's EU Structural Funds Programme funded by the Irish Government and the European Union.