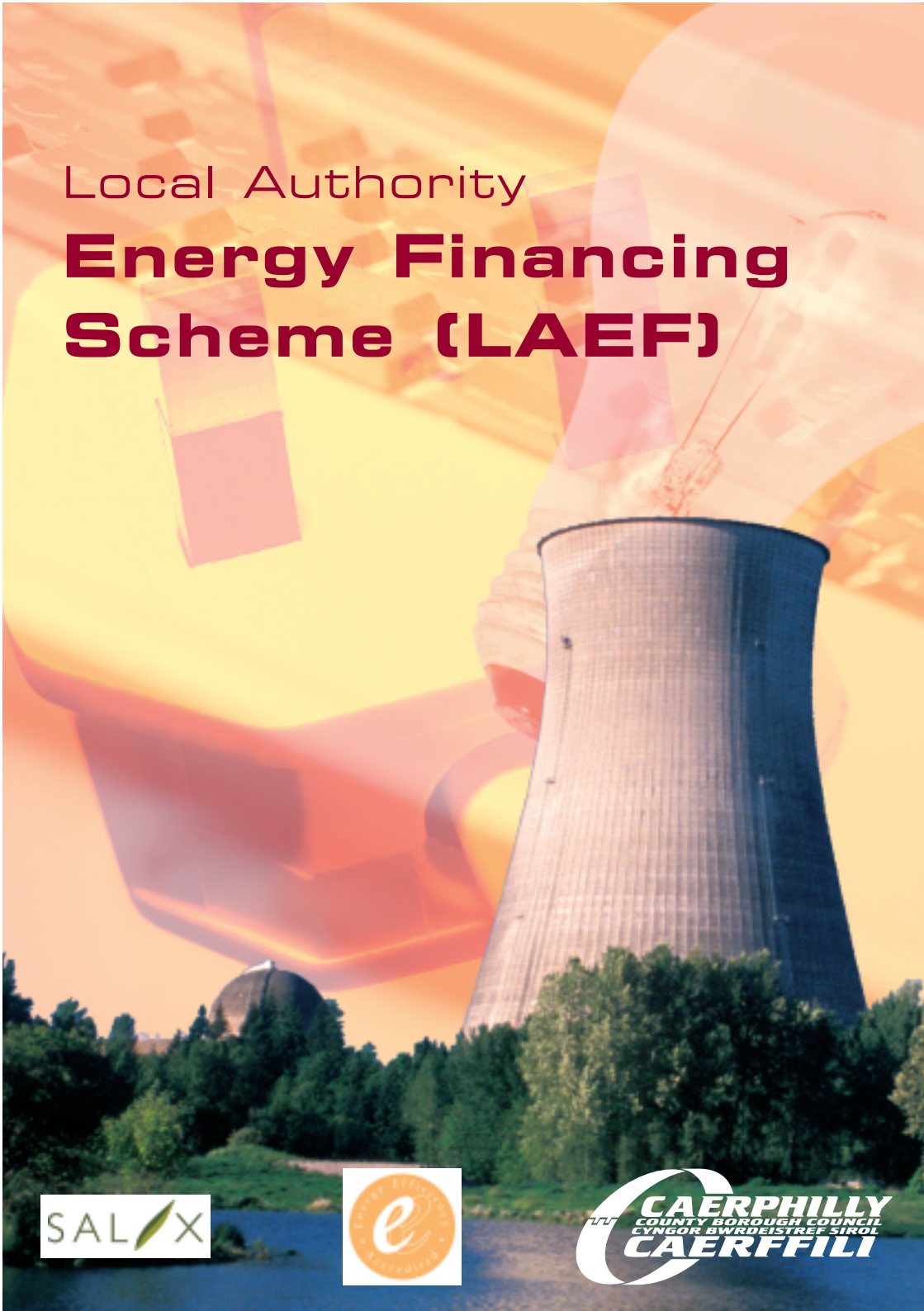
Local Authority
Energy Financing
Scheme (LAEF)
SALIX
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# *Local Authority Energy Financing Scheme (LAEF)*

The LAEF scheme is a funding mechanism set up in 2004 by Caerphilly CBC and Salix Finance Ltd. Salix Finance Ltd has invested £300,000 which has been matched with £500,000 by the Authority to produce a fund which is available to finance energy efficiency improvements to establishments such as Residential Homes, Schools, Leisure Centres and Libraries.

Caerphilly CBC is one of 19 Local Authorities in the UK to have taken advantage of this opportunity to combat global climate change at a local level.

The LAEF loan scheme plays an integral part in delivering targets in key policy areas such as The Corporate Energy Policy, Welsh Assembly Government Policy Agreement on $CO_2$ reduction, the Sustainable Development Strategy and the Eco-Schools award scheme.

The £800,000 fund can be used to develop energy efficiency projects in non-domestic properties. Each proposed project will provide a significant carbon dioxide, cost and consumption reduction, and each project will payback within 5 years. The LAEF loan scheme is interest-free and is designed to act as an incentive for all corporate properties to become more energy efficient without immediate financial outlay.

Annual loan repayments are based on 75% of an establishment's projected annual saving from reduced utility bills allowing establishments to keep the remainder of the saving. After the loan has been paid back, all the ongoing savings on the utility bills go direct to the establishment that took out the loan.

Some existing LAEF Projects that YOU can take advantage of:

| | Typical Energy Savings: |
|---|---|
| • Loft / Cavity Wall Insulation | 15% |
| • Automatic Lighting Controls | 30 - 35% |
| • Upgraded Boiler Controls | 20% |
| • Draught-proofing | 10 - 20% |
| • Swimming Pool Covers | 5% |
| • Valve / Pipework Insulation | 5 - 7% |
| • Thermostatic Radiator Valves | 5 - 10% |
| • Inverters to Pumps and Fans | 20 - 70% |

It could not be simpler to take advantage of the LAEF loan scheme. The Energy Team will take the burden away from you and carry out all the necessary administration on your behalf. We can organise a free Energy Audit of your site along with organising quotations required for any projects that the Energy and Water Conservation Team recommend. We will calculate projected annual cost saving together with energy and carbon emission savings, and generate your annual repayment schedule for you.

***To take advantage of the services the Energy and Water Conservation Team can provide, or to enquire about the LAEF loan scheme contact:***

***Paul Rossiter – 01495 235524***
***rossip@caerphilly.gov.uk***

***As of March 2007, the Energy Team, through the LAEF loan scheme, have invested in 99 energy saving projects totalling £380,000. Total savings across the Authority are projected to be around £94,000 per year at present with associated carbon emission savings of 1,140 tonnes annually.***

**An example of Energy Efficiency improvements made under the LAEF Scheme.**

**Caerphilly Sports Centre – Sports Hall Lighting upgrade.**

**BEFORE:**

**Consumption Saving: 28,141kWh**
**$CO_2$ Saving: 12,100Kg (12.1 tonnes)**
**Electricity Cost Saving: £1,800 p.a.**

**AFTER:**

**Increased Light Output: by 25% to 411 lux**
**Reduction in Electrical Load: 35%**
**Payback Period: 5.0 yrs**

# *Energy Audit*

An energy audit is a technical investigation of the **control** and **flow** of energy in a building with the aim of identifying cost effective energy saving measures.

**The Energy and Water Conservation Team can undertake energy audits for your property.** Each audit requires a site inspection with full access to the building, but there will be no inconvenience to the building users.

The Energy and Water Conservation Team will prioritise the recommendations from the audit to enable the establishment to make a series of simple energy savings. The recommendations can be a mix of no cost, low cost and high cost projects and funding for the improvements may be linked to the Local Authority Energy Financing Scheme.

Examples of typical audit findings.

| | Recommendation | £ Saving | kWh or $M^3$ | $CO_2$ (Tonnes) | £ Cost | Payback Yrs |
|---|---|---|---|---|---|---|
| 1 | Better control of energy – particularly lights | £235 | 6,200kWh | 2.7 | 0 | Immediate |
| 2 | Vending machines – use a time switch to shut off at night* | £510 | 16,800kWh | 7.2 | £480 | 0.9 |
| 3 | Link the split air conditioners to the building management system | £840 | 23,200kWh | 9.9 | £4,000 | 4.8 |
| | **Totals** | **£1,585** | **46,200** | **19.8** | **£4,480** | ~ |

*Where food hygiene is not compromised.

***If you require an audit for your property please contact the Energy and Water Conservation Team on 01495 235542.***

# *Central Invoicing*

The Energy and Water Conservation Team has had great difficulty over recent years in collecting the necessary energy and water information for monitoring and analysis purposes. Certain establishments have been slow to forward their data or have not returned any at all.

To overcome this problem the Sustainable Development Advisory Panel gave approval for all utility invoices to be sent directly to the Energy and Water Conservation Team. The invoices are checked for accuracy and if any discrepancies are found an amended invoice is requested from the utility supplier. When the Energy and Water Conservation Team are satisfied with the invoice, all relevant data - such as consumption (kWh), Climate Change Levy, VAT, maximum demand (kVarh), and standing charges - is entered into the TEAM Sigma database where it is analysed. The invoices are then sent out to the customer - usually the same day.

Information from the invoices will feed into corporate property Asset Management Planning, Local Authority Energy Financing Scheme projects, Welsh Assembly Government Performance Indicators and Consortium of Local Authorities in Wales (CLAW) statistics and used for internal monitoring and analysis purposes.

# *Case study – Markham Primary*

Markham Primary School is one of the growing number of schools that are taking climate change seriously. Not only is the school one of Caerphilly's Eco-Schools, but the staff are also making significant inroads into reducing the building's carbon footprint.

| Markham Primary kWh/square metre 2005/2006 | | | |
|---|---|---|---|
| | **Gas** | **Electricity** | **Water** |
| Actual | **128.3** | **28.06** | **2.9** |
| Poor Practice | 209 | 47 | n/a |
| Typical Practice | 157 | 34 | 3.8 |
| Good Practice | 110 | 25 | 2.7 |

Since November 2005 the school has taken on four Local Authority Energy Financing Scheme projects on the advice of Caerphilly CBC Energy and Water Conservation Team.

<u>There have been two significant projects in the boiler plant room.</u>

The boiler was linked to a SeaChange controller and thermostats within the building. The overall effect was to provide heating at times of the day when it was needed. This has helped eliminate over and under heating. The system now optimises and compensates the heating requirements of the building according to external temperatures and according to the usage of the building throughout the year.

***The cost of the project was £1,400 but each year the school is now saving £1,256 by using less gas at the boiler.***

The second improvement was to insulate exposed valves and pipework. Many schools waste a significant proportion of energy through poor insulation of their heating system. Improving insulation is a simple and cost effective measure.

From the point where the pipework left the boiler, all hot pipework was insulated using a combination of pre-formed tubes of foam and insulating jackets for valves and flanges.

***The insulation cost the school £876 but each year the school is saving £248 by using less gas at the boiler. The $CO_2$ saved is over 1.6 tonnes per year.***

Draught proofing of doors and windows has made a significant improvement to the comfort levels in the school. Doors and windows have been adjusted to now open and close correctly without any large gaps around the frames which previously allowed draughts in and heat out.

This has improved the air tightness of the building, which results in less gas being consumed at the boiler.

**The cost of the project was £3,337 but the annual saving on the gas invoices is £1,005. The carbon saving is 11.9 tonnes which equates to 11,934kWh.**

Loft Insulation has been installed to retain the heat in the classrooms, offices and hall.

**The cost of installing the insulation was £2,548 and the annual saving from less gas being consumed at the boiler is £1,000.**

The combined effect of these projects has been to reduce the amount being paid on the school's gas invoices by £3,514 per year. There has also been a dramatic reduction in annual $CO_2$ emissions by 40.4 tonnes.

**By working closely with the school, the Energy and Water Conservation Team was able to save almost £5,000 by claiming back from Welsh Water sewerage charges relating to water consumption arising from a plumbing leak.**