

REPORT OF THE DIRECTOR OF TECHNICAL SERVICES

INVESTMENT IN ENERGY EFFICIENCY PROGRAMME PROGRESS REPORT

1.0 EXECUTIVE SUMMARY

1.1 This report updates Members on the progress made in implementing the Investment in Energy Efficiency Programme phases 1 and 2 and the Microgeneration Feasibility Study together with recent developments in the field of energy conservation over the last six months.

2.0 BACKGROUND

2.1 At Council on 1 March 2006 and Cabinet on 24 January 2007 Members approved the Investment in Energy Efficiency Programme phases 1 and 2 respectively to enable the Council to reduce its energy costs whilst also achieving significant efficiency improvements in an extended programme through to 2011\12. This report details progress to date in implementing the programme and provides brief details of forthcoming statutory requirements.

2.2 This programme forms a key element of the Council's Climate Change Strategy by addressing carbon management through the reduction of carbon emissions across the Council.

2.3 The Energy Efficiency Programme directly supports achievement of the Council's Corporate Objectives and Priorities as detailed in the table below :

Corporate Objectives and Priorities	How the Energy Efficiency Programme supports Corporate Objectives and Priorities
1. Protecting & Improving the Environment Priority 1.2 Environmental Sustainability Priority 1.2.1 Priority 1.2.3	Protecting and Improving our Environment by reducing the production of harmful emissions which has a direct effect on climate change. Minimising the amount of waste produced by the Council Improving the energy efficiency of Council Buildings
5. Making Wirral Safer Priority 5.1 Reducing crime and fear of crime Priority 5.1.3 Improved street lighting	Improving street lighting, thereby reducing the incidence of night time road accidents, reducing crime and anti-social behaviour together with the reduction of fear of such occurrences, and generally improving safety of Wirral residents
9. Continuously Improving Our Services Priorities 9.2 and 9.3	By improving the efficiency of plant and services, increasing the reliability of the equipment and reducing the need for random repair visits.

3.0 PROGRESS TO DATE

Investment in Energy Efficiency Programme Phase One (2006 to 2009)

3.1 Building Energy Management System (Year 1)

The BEMS system has now been installed in all sites which are now operating automatically apart from West Kirby Concourse, to minimise disruptions at the Concourse and to reduce the close down to a minimum the completion of the system was rescheduled to 16th April 2007 to coincide with the re-scheduled Heat Recovery Project. Minor works remain with sites currently being completed.

3.2 Building Energy Management System (Year 2)

Development of phase 2 of the scheme as detailed previously will begin in July. As approved by Council in January 2006 the Energy Conservation Engineer assigned to manage the system has been appointed and takes up the post in June.

3.3 Burner Management Units

As previously reported, Gas Force Ltd has completed the initial programme worth £83,000 to fit 100 units in 61 sites. As Gas Force is the only company able to provide this equipment to the required specification, following consultation with Internal Audit, the contract was awarded to Gas Force as we were unable to seek competitive tenders. A further 10 sites (20 boilers) have been identified as being suitable for this device and we expect to complete the following 5 sites (within the existing budget): Esher House, Tennis Centre, Professional Excellence Centre, Cavendish Centre, Woodchurch Leisure Centre.

3.4 Water Reduction Scheme

The Pool Water Recovery System at Europa Pools is now in operation and appears to be exceeding expectations. Following a detailed survey of the various sites the contract for the remaining water saving equipment has been extended (amount of equipment) and the tenders are currently being evaluated.

3.5 Leisure Sites

Firm proposals and costs have now been received for the Heat Recovery Systems at West Kirby Concourse and Woodchurch Recreation Centre, due to the highly specialised nature of this equipment and the proven performance of their equipment previously installed at Guinea Gap Leisure Centre it was felt that Munters Ltd was the only company able to provide this equipment to the required specification, following consultation with Internal Audit, the contract was awarded to them directly. The installations will commence with the Concourse on 10th April 2007 followed by Woodchurch immediately after where no site closure will be necessary. Planning approval has been granted on the Woodchurch project. As previously reported the heat recovery system at the Oval Sports Centre has been rescheduled to coincide with the site refurbishment project.

3.6 Boiler Replacement Programme

Work is continuing to replace/install new boilers. Poulton House - is now complete as is The Oval Grandstand and South Annexe. Works will commence shortly at Wallasey Village Library, 78 Union Street, Rosclare House, Greasby Library, Fernleigh EPH and Bromborough Civic Centre. Arrangements are being made to carry forward the necessary funding. Detailed work is continuing to identify further suitable sites.

3.7 **Street Lighting**

The first year of the bulk lamp replacement contract was completed at the end of March with 9,000 lamps replaced at a cost of £139,000.

Work on Year 2 of the contract commenced in April with completion of 9,000 lamp replacements scheduled for September. Up to 18 May 2007 the replacement of 1,300 lamps had been completed.

3.8 **Bill Validation Scheme**

The transfer of existing data to the new system has now been completed, training for the new system will take place shortly. We are now receiving electronic data from Corona Energy (Gas) and British Gas Business (Electricity). We are in discussions with United Utilities to obtain their data in electronic format. They have now provided a quote of £80\month for the provision of electronic data.

Investment in Energy Efficiency Programme Phase Two (2007 to 2011)

3.9 **Cavity Wall Insulation**

The project is underway to identify suitable sites and installation contractors and prepare a technical specification which will allow the project to be competitively tendered.

3.10 **Boiler House Insulation**

Following surveys at 54 sites, data is now being collated to enable a technical specification to be prepared and the project competitively tendered.

3.11 **Electricity Efficiency Programme**

This project will begin shortly, it will involve the survey of all appropriate operational properties to ascertain the type of equipment installed. This will allow suitable schemes in years 2 to 4 to be implemented which will improve the efficient operation of electrical equipment.

3.12 **Good Housekeeping Awareness Raising**

A member of the Energy Conservation Team is currently preparing publicity\poster campaign material. The new Energy Awareness Officers posts will be advertised shortly.

3.13 Resulting from the Council Motion on the 30th October 2006 requesting that we write to all Staff and Schools regarding energy conservation, a letter and associated material produced by Technical Services has been sent by The Director of Children's Services to all headteachers. An article was also published in the "onecouncil" magazine for all staff. A second article will shortly be published.

4.0 FUTURE DEVELOPMENTS

4.1 Brief details are highlighted below of future statutory requirements that will require further work by the Energy Conservation Team to allow timely implementation. Future reports will be presented to Committee once the details have been made available by the Government.

4.2 **Energy Performance in Buildings Regulations 2007**

- 4.2.1 The main purpose of the Regulations is to implement Articles 7, 9 and 10 of the Energy Performance of Buildings Directive (EU/2002/91/EC) (EPBD) in England and Wales. The other substantive articles, Articles 3-6, were implemented on 6 April 2006 by the Building and Approved Inspectors (Amendment) Regulations 2006 (SI 2006/652).
- 4.2.2 The objective of the EPBD is to promote the improvement of the energy performance of buildings within the European Community. Implementing the EPBD will encourage owners and tenants to choose energy efficient buildings when seeking new accommodation and to improve the performance of buildings they occupy. Implementation of the Directive is seen as an important contribution to reducing carbon emissions as part of the UK climate change programme.
- 4.2.3 The Regulations introduce Energy Performance Certificates (EPCs) for buildings when they are constructed, sold or let, and Display Energy Certificates (DECs) for larger buildings (currently, >1000m². At present we operate approximately 130 buildings which meet this criteria) occupied by public authorities and institutions providing public services to a large number of people and therefore frequently visited by those people. This will implement Article 7 of the EPBD.
- 4.2.4 EPCs show prospective building owners or tenants the current energy performance rating of a building, and the potential performance if energy efficiency measures were implemented. Ratings are on an A-G scale, based on a benchmark measure of similar buildings, and include a potential rating that the building could achieve if improved. DECs are intended to show visitors to larger public buildings how well the building is being run, again with a rating on the A-G scale (similar in appearance to those currently displayed on White Goods and New Cars).
- 4.2.5 EPCs must be accompanied by a recommendations report and DECs must be accompanied by an advisory report. Both types of report list recommendations of measures to improve the energy performance and management of the building.
- 4.2.6 From 6 April 2008, DECs will be required to be displayed in all participating buildings. It has been suggested (but not confirmed) that Energy Managers will be responsible for producing DECs within Local Authorities and that the certificates will be required on an annual basis to allow performance to be monitored.

4.3 **Display Energy Certificates**

- 4.3.1 To enable the Council to maintain its proactive commitment to protect and improve the environment and anticipate and be well prepared for the implementation of the Energy Performance in Buildings Regulations 2007 (European Energy Performance of Buildings Directive) we have signed up to the European Display® Campaign.
- 4.3.2 The European Display® Campaign is a voluntary scheme designed by energy experts from 20 European towns and cities. Currently there are 241 Public Bodies participating including 34 Local Authorities in the UK with Wirral being the first in the North West. The campaign is aimed at encouraging local authorities to publicly display the energy and environmental performances of their public buildings using the same energy label that is used for household appliances.

4.3.3 The Display® campaign provides:

- a simple and efficient way to show the performance of municipal buildings (energy and water consumption and CO₂ emissions)
- the similarity of the Display® label to the label showing the energy performance of electric household appliances
- public awareness, public buildings are used and visited by many people this is an example to the staff and public that demonstrates the environmentally friendly behaviour of the Council
- the means for Local Authorities to show a willingness to undertake cost-saving measures

4.3.4 The idea is to engage both staff and the general public and make them more conscious of their energy consumption in order to reduce energy use and greenhouse gas emissions and achieve financial savings. A copy of the DEC for Wallasey Town Hall detailing its performance is contained within Appendix A.

4.4 Extension of the European Emissions Trading Scheme

4.4.1 In the Energy Review in July 2006 the Government committed to consult on measures to cut carbon emissions from large commercial and public sector organisations (including supermarkets, hotel chains, government departments, large local authority buildings) by 1.2 MtC / year by 2020.

4.4.2 As the Government stated in the Energy Review, “Corporate leaders have called for the Government to address the gap in its current policy coverage by developing ‘strong new policy instruments’ to ‘focus on the large, non-energy intensive users of energy in the commercial and public sectors’ “.

4.4.3 The large, non-energy intensive sector (including public sector organisations) create around 10% of the UK’s emissions. Emissions from energy use by this sector are currently rising year on year – DTI projections currently point to an estimated 11% increase in the target sector emissions by 2030 compared with 2010 levels. This sector therefore has a vital role in reducing the carbon dioxide emissions that contribute to dangerous climate change.

4.4.4 The Energy Review committed Government to considering options to reduce energy use emissions in large non-energy intensive organisations and in particular mentioned two possible options:

- **The Energy Performance Commitment (EPC) proposal.** The EPC would be a new mandatory emissions trading scheme for the large non-energy intensive sector. It would place an overall cap on energy use emissions from participants.

- **Voluntary benchmarking and reporting of energy use.** This approach would encourage participants to report their energy use regularly and in a systematic way that enabled comparisons of energy efficiency with relevant peers (“benchmarking”).

4.4.5 Preparatory work on the scheme is due to begin later this year prior to implementation in 2009. A future report will be presented to the Committee when further details are made available by DEFRA.

5.0 MICROGENERATION

- 5.1 A grant for 50% of funding was obtained from The Carbon Trust to undertake a microgeneration study to enable a Microgeneration Strategy document to be produced. This has now been completed by their approved consultants. The draft report received from The Carbon Trust is currently being reviewed by the Energy Conservation Team.
- 5.2 Following the provision of an interim report by the consultants in February 2007 to the Technical Services Department five demonstration projects have been identified to promote the environmental benefits of microgeneration, they are:
- the installation of a wind turbine at Wirral Country Park,
 - solar thermal panels at Europa Pools and Pensall House,
 - solar photovoltaic panels at Cheshire Lines Building,
 - a micro combined heat and power plant at Pensall House.

The Council has allocated £100,000 to ensure these projects will be implemented this year.

- 5.3 The overall aim of this project is to develop suitable performance standards and guidance for the installation of low or zero carbon energy sources in buildings. As part of it's continuing commitment the Technical Services Department is currently seeking to introduce renewable technologies into its building projects by installing a 15kW wind generator and 3 solar water heating installations at The Lairdside Foundation, Dale Farm, Grove Street Primary School and Town Lane Infants School respectively. Although not strictly defined as microgeneration, two Wood Chip Boilers (classed as environmentally sustainable forms of energy production) will be installed at Dale Farm and the new Floral Pavilion.
- 5.4 Whilst it is recognised that not all of the technologies defined as microgeneration will be suitable for the Council's building stock, and not all of the buildings will be suitable for adaptation, it is clear that a proportion of the buildings could benefit greatly from such technologies. Further details on these projects will be submitted in a future report for Member approval.

6.0 EXPENDITURE TO DATE

- 6.1 The table below details the committed expenditure to date which is within the approved budget.

Scheme	06/07 Spend Committed to date (£)	Approved 06/07 Budget (£)	Funding Stream
Building Energy Management System	254,000	344,000	Prudential
Burner Management Units	98,750	100,430	PPM
Extended Water Reduction Scheme (estimated)	42,720	42,720	Repair & Maint.\PPM
Leisure Sites	310,000	320,000	Prudential

Boiler Replacement Programme	197,000	200,000	PPM
Street Lighting	139,000	140,000	Service Re-Engineering
Total	1,041,470	1,147,150	

6.2 As a major portion of the energy savings will result from improvements to heating systems, these savings are now being realised. Because of the nature of the analysis undertaken a full twelve months operation of the Building Energy Management System will be required to evaluate its performance. A future report will set out the energy\cost savings as these control systems begin to improve operational efficiency.

6.3 As the Burner Management Units have inbuilt analysis functions, the performance of these units has been evaluated. To date we have carried out evaluations on an 18% sample with the average saving being 20%. Extrapolating this figure across the whole project would suggest an annual saving of 4million kWh's at £104,000.

7.0 FINANCIAL AND STAFFING IMPLICATIONS

7.1 As funding for these projects was approved at Council on the 1 March 2006 and Cabinet on the 24 January 2007 there are no further financial or staffing implications, other than detailed above, arising from this report.

7.2 As detailed and subsequently approved in the previous reports, four additional members of staff were identified to successfully implement parts of the programme. The posts of BEMS engineer and clerical assistant have been filled. It is expected that the two Energy Awareness Officer posts will be filled later this year.

7.3 To enable the Energy Conservation Section to recover staff costs and to continue to develop the service, provide innovative solutions to energy conservation and continue to reduce costs and consumption it is proposed to levy a small commission charge on each unit of energy used (electricity and gas) which would be collected via utility bills, typically this would be 0.25 pence per kilowatt hour for gas and 0.54 pence per kilowatt hour for electricity. Discussions have already taken place with Children and Young People's Department and the process agreed in principal. The innovative option to recover costs in this way has been adopted by many Local Authorities and approved for use by the OGCBS (Office of Government Commerce). A future report will give further detail on this funding proposal for Members to approve.

8.0 EQUAL OPPORTUNITIES IMPLICATIONS

8.1 There are no implications under this heading.

9.0 PLANNING IMPLICATIONS

9.1 There are no implications under this heading.

10.0 COMMUNITY SAFETY IMPLICATIONS

10.1 There are no implications under this heading.

11.0 HUMAN RIGHTS IMPLICATIONS

11.1 There are no specific human rights implications arising directly from this report.

12.0 LOCAL AGENDA 21 IMPLICATIONS

12.1 There are significant Local Agenda 21 implications associated with the progress made to date in the implementation of these schemes to reduce harmful emissions and the forthcoming legislation which will reinforce the message to Stakeholders regarding the Council's continued commitment to the environment.

13.0 ACCESS TO INFORMATION ACT

13.1 Cabinet reports of the 20 February 2006 and 24 January 2007 – "Investment in Energy Efficiency Programme" and "Investment in Energy Efficiency Programme Phase 2" together with the Executive Board report "Investment in Energy Efficiency Programme Progress Report " on the 4 October 2006 were used in the preparation of this report.

14.0 LOCAL MEMBER SUPPORT IMPLICATIONS

14.1 There are no implications under this heading.

15.0 RECOMMENDATIONS

15.1 That Members note the progress made to date in implementing the Investment in Energy Efficiency Programme and Microgeneration Feasibility Study.

15.2 That Members agree, that further work is required to allow the implementation of the Statutory Items detailed in section 4 of this report.

**DAVID GREEN, DIRECTOR
TECHNICAL SERVICES**

This report was compiled by Tony Dodd, Energy Manager, who can be contacted on 606 2354

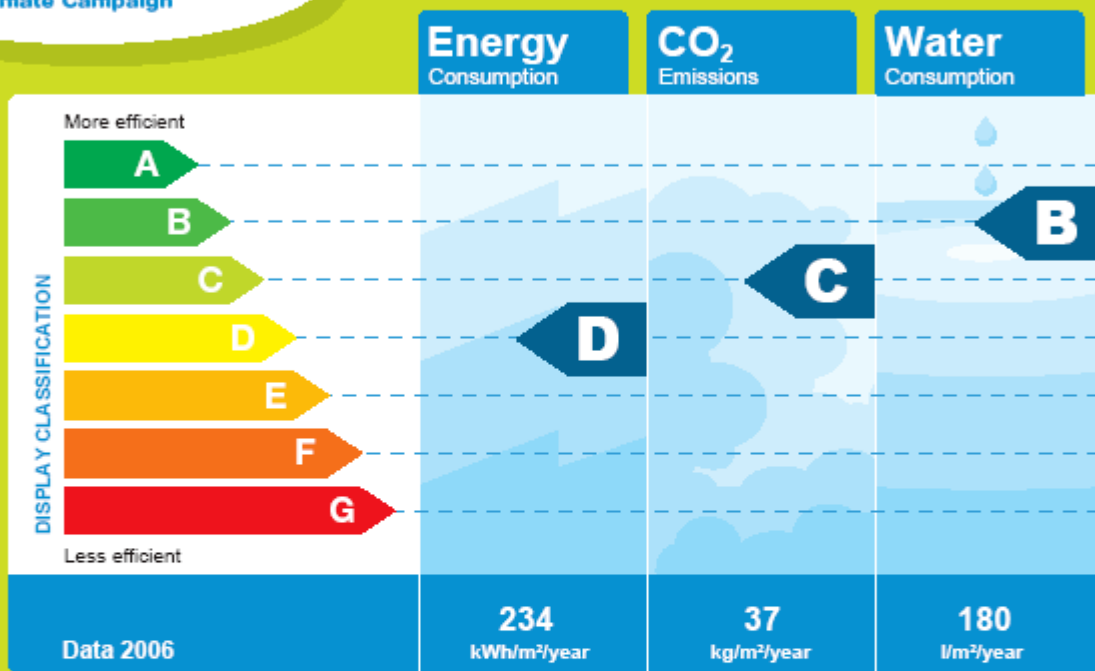
APPENDIX A – Example of a Display Energy Certificate



2007

Wallasey Town Hall

How does this building compare?



Towards a class A building

Simple actions

Turn off lights when they are not required (when the rooms are unoccupied or when there is adequate natural light available).
Replace standard tungsten bulbs with energy saving Compact Fluorescent versions.
Install 26mm diameter (T8) fluorescent lamps in place of 38mm (T12) lamps.
Ensure that room thermostats are set correctly.
Check that time switches are set to the correct time and day of the week.
Close curtains and blinds during winter nights.
Repair dripping taps and leaks.

Technical solutions

During 2006 a Building Energy Management System (BEMS) was installed. An energy efficient lighting control system and new energy efficient boilers have also been installed.

Energy sources



68 %
Fossil



32 %
Renewable

Improving performance by one class could save annually:

The energy consumption of	The CO ₂ emissions of a car going	Water consumption for
12.7 family houses	13.8 times around the earth	20824 showers



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