ANGUS COUNCIL

RESOURCES AND CENTRAL SERVICES COMMITTEE 03 February 2005

REPORT BY THE DIRECTOR OF PROPERTY SERVICES No 131/05

ENERGY PERFORMANCE OF BUILDINGS

Abstract

This report advises on the implications of the EU Directive on the Energy Performance of Buildings as the Government prepares to enact legislation, which will introduce new energy management obligations in January 2006.

RECOMMENDATION

The Resources and Central Services Committee is recommended to: -

1. note the contents of this report;

2. note that the Director of Property Services will continue to monitor developments, assess impact and submit a further report detailing the resource implications of this legislation.

1 INTRODUCTION

The European Union issued a Directive on the Energy Performance of Buildings, 2002/91, in 2002. Member States are required to incorporate this Directive into national legislation by 04 January 2006. The Office of the Deputy Prime Minister [ODPM] is co-ordinating the Government's response to this directive and is currently developing a strategy for its implementation.

The incorporation of this directive into national legislation will introduce new legal obligations for the management and disclosure of the energy performance of council non-housing buildings.

This report provides an overview of the requirements of the Directive, the implications for Angus Council and the actions recommended.

2 BACKGROUND

The new European Union Directive on the Energy Performance of Buildings is intended to ensure that building standards across Europe place a high emphasis on minimising energy consumption. This will reduce the use of energy of buildings across Europe, without requiring huge additional expenditure, whilst at the same time perceptibly increasing comfort for users.

These measures are a vital component of the EU's strategy to meet its Kyoto Protocol commitments. One fifth of present energy consumption could be saved by 2010 by applying tougher standards to new buildings and to buildings undergoing major refurbishment. This represents a major contribution to meeting the Kyoto target and, significantly, would not require any changes to our way of life.

3 LEGISLATIVE REQUIREMENTS

Under this legislation: -

- common methodology for calculating the energy performance of a building, taking account of local climatic conditions, will be applied throughout the EU;
- minimum standards for energy performance will be determined by Member States, and applied both to new buildings and to major refurbishments of existing large buildings. Many will be based on existing or planned European norms;
- a system of building certificates will make energy consumption levels much more visible to owners, tenants and users;
- boilers and air conditioning systems above minimum sizes will be inspected regularly to verify their energy efficiency and greenhouse emissions.

3.1 Measuring Energy Performance

The ODPM is currently evaluating energy performance calculation options available in Europe and North America with a view to establishing, through consultation, the most appropriate methodology to adopt

The methodology will classify buildings according to their type e.g. residential, offices, educational buildings, hospitals, hotels and restaurants, sports facilities, wholesale and retail trade services buildings and other types of energy consuming buildings.

It will encompass aspects including thermal insulation, position and orientation, built-in lighting systems, hot water and heating systems, air conditioning and ventilation systems, natural ventilation and passive lighting and heating from the sun. It will also consider the use of renewable technologies including solar heating or power systems, district heating and combined heat and power installations [CHP]. It will be undertaken by qualified and/or accredited experts.

A recent seminar by the Carbon Trust advised that two methodologies are being considered for, respectively, simple and complex buildings.

The Property Services department does not currently have sufficient information available to assess the implications of undertaking such calculations and intends seeking the advice from other organisations before and after the methodology is finalised. It is however anticipated that this requirement will extend the design period for projects and increase the associated costs.

3.2 Applying Standards

The ODPM is currently evaluating energy performance standards, which build on those already incorporated in the national Building Regulations. It has been made very clear that standards will be regularly lifted over the coming years as part of the strategy to contribute to achieving the declared target of 60% reduction in CO_2 emissions by 2050.

Forthcoming revisions to the Building Regulations in England and Wales, which will come into effect in 2005, will incorporate compliance with the Directive and are expected to set standards which are intended to achieve a 27% improvement in performance. Scottish Building Regulations already set a higher standard than those in England and Wales but it is anticipated that our standards will be increased proportionally.

EU Member States will set, and regularly review, minimum energy performance standards, taking account of local climatic conditions, for different categories of both new and existing buildings

Energy performance standards will apply to all new buildings built from January 2006. In addition, for larger buildings (over 1,000 m^2), a full feasibility assessment of alternative heating and energy supply systems e.g. renewable energy, CHP, district heating, heat pumps must be made before construction starts.

Existing buildings larger than 1,000 m^2 will also be subject to energy performance improvements when they undergo major [total cost >25% of the building's value or involves >25% of the building shell] refurbishment or renovations. Their energy performance should be upgraded as much as is technically and economically feasible in accordance with national performance standards.

A limited number of building types may be exempted.

3.3 Certifying energy efficiency

To give prospective owners or tenants better information on the expected running costs of a building or apartment, sellers or landlords will have to provide them with a recent energy performance certificate.

With buyers and prospective tenants better informed, builders and landlords will have greater incentive to incorporate energy-efficiency technologies and designs into their buildings, in return for lower running costs.

National authorities will include reference values to allow the comparison of energy performance certificates. Certificates must also include recommendations for improving energy performance.

Energy performance certificates will have to be displayed in large buildings (over 1,000 m2) regularly visited by the public, to raise awareness amongst citizens of the issue of energy efficiency in their local community. Recommended and current indoor temperatures may also be displayed.

A recent seminar by the Carbon Trust advised that the current draft proposed certificate requires display of a building's performance, on an A-G scale similar to that employed for white goods i.e. fridge's, freezers, washing machines, tumble driers etc which demonstrate:-

- performance as designed [Design Rating];
- performance as built [Asset Rating] and
- performance as operated [Operational Rating]

The seminar also advised that it is reasonable to believe that designers will require to be quality assured to demonstrate that the calculation methodology is being rigorously undertaken.

The energy performance certificates are to be produced in an independent manner by qualified and/or accredited experts whether operating as sole traders or employed by public or private enterprise bodies.

These certificates will require to be refreshed on a cyclical basis and whenever a major refurbishment is undertaken, or any other event occurs which may change the building's energy performance e.g. change of occupant or use.

3.4 Regular Inspection

Member States will establish a system of regular inspection of boilers and air conditioning equipment in large households, multiple occupancy houses and commercial and public

buildings, since badly tuned equipment can cause excessive energy consumption and/or carbon dioxide emissions.

These inspections are to be undertaken in an independent manner by qualified and/or accredited experts whether operating as sole traders or employed by public or private enterprise bodies.

Regular inspections will be required for boilers fired by non-renewable liquid and solid fuel with an output greater than 20kW. Such boilers with an output greater than 100 kW must be inspected at least every two years, while for gas-fired this interval may be up to every four years.

Heating installations larger than 20kW and more than 15 yeas old will be subject to one-off inspections of the complete system. This assessment will advise the user on possible replacement and/or modifications to the installation.

Regular inspections will also be required for all air conditioning systems with an output greater than 12kW.boilers.

3.5 Other Initiatives

Revisions to Part L of the Building Regulations for England and Wales in support of this directive is introducing mandatory building logbooks to enable landlords to bring together relevant information regarding their building to provide a single reference for how the building should and is performing and the actions that have and should be undertaken to improve this performance.

Each building logbook will detail: -

- Building description; use and design strategy
- Schedule of floor areas
- Plant and equipment locations
- Installed capacities
- Operational and control strategies for energy consuming equipment
- Commissioning report
- Operating and maintenance instructions
- Meter schedule
- Design assessment of carbon emissions and performance benchmark
- Measured air permeability
- Emergency procedures
- Infra-red thermography and thermal bridging
- Energy and water saving features
- Provision of new sub -metering

A recent seminar by the Carbon Trust discussed concerns regarding the availability of suitably qualified and experienced engineers to resource this requirement. It also advised that it is likely that the Scottish Building Regulations will be up-dated in the near future to incorporate a requirement for building log books.

The Chartered Institution of Building Services Engineers has published TM 31 introducing model building logbooks and the Actionenergy/Carbon Trust has published Good Practice Guide GPG348 on their implementation. The Property Services department has assessed the resources needed to establish and maintain building logbooks for non-housing buildings.

The Government announced in January the intention to introduce a Sustainable Buildings Code in 2005 for implementation in 2006. This code is intended to address energy, water and waste issues as well as materials. It will integrate with the Secure and Sustainable Buildings Act 2004 and the revisions to Part L of the Building Regulations for England and Wales.

It is not clear to what extent Scotland will be affected in future by these initiatives, which are intended to catch up with Scottish standards, but they reinforce the importance of improving the sustainability characteristics of buildings, its energy consumption and emissions performance and the maintenance of detailed records.

3.6 Operational Implications

The Property Services department is already progressing the Council's corporate Energy Management strategy and most of the obligations introduced by this legislation are already being fulfilled to varying degrees. However compliance with the legislation, which has yet to be finalised and implemented will, require changes in current arrangements for managing and developing the non-housing council estate.

Public access to energy performance certificates will highlight the Council's performance and the extent of its commitment to improvement.

New working arrangements and resources will be needed to ensure that the legislative obligations are complied with, as detailed in Table 1.

Table 1 Impact

Obligation	Impact	Comment
Measuring Energy Performance	Extension of project programmes and increased fee costs.	It is too early to be able assess the scope of additional work needed during the design and construction stages but additional quality assured in-house or consultant resources will be needed.
Applying Standards	Increased costs for new build and major refurbishment projects.	Projects are currently designed to no better than the standard set by the Building Regulations, often due to financial pressures. The introduction of more demanding targets and a Whole Life Costing approach will require higher initial capital investment, which will be compensated for by savings in running costs during the operational life of the building. The adoption of sustainable best practice will have similar affect.
Certifying energy efficiency	Quality Assured resources will be needed.	It is too early to be able to assess the scope of additional work needed during the design and construction stages but additional quality assured in-house or consultant resources will be needed.

Obligation	Impact	Comment
Regular Inspection	Additional inspection and reporting.	Equipment and systems are currently subject to regular inspection, testing and where necessary, repair/correction through service contracts. Additional contracts and associated funding will be necessary.

4 FINANCIAL IMPLICATIONS

There are no financial implications immediately associated with this report but it is evident that there will be implications, which will be detailed, in a subsequent report when the Government has concluded its research and issued specific guidance.

5 HUMAN RIGHTS ACT IMPLICATIONS

There are no Human Rights Act implications specific to this report.

6 CONSULTATION

The Chief Executive, the Director of Law & Administration and the Director of Finance have been consulted in the preparation of this report.

7 CONCLUSION

The Resources and Central Services Committee is recommended to note the contents of this report and that the Director of Property Services will continue to monitor developments, assess impact and submit a further report detailing the resource implications of this legislation.

REFERENCES

Committee	***Date***	***Report No***	***Subject***
Policy and Resources	23 October 2001	1202/01	Energy Management Updated Strategy And Future Funding Arrangements
Policy and Resources	09 September 1997	917/97	Energy Management - A Corporate Commitment

Appendix 1 Draft Energy Performance Certificate

BACKGROUND PAPERS

No background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (other than any containing confidential or exempt information), were relied on to any material extent in preparing the above report.

M G Lunny
Director of Property Services

Appendix 2 Draft Energy Performance Certificate