

# Improving energy efficiency



Prepared for the Auditor General for Scotland and the Accounts Commission  
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# Summary



Tackling climate change and making the best use of resources require the efficient use of energy.



## Setting the scene

**1.** Climate change represents a serious threat to the world. Evidence suggests that increased carbon dioxide (CO<sub>2</sub>) and other greenhouse gas emissions (see [box below](#)) have contributed to climate change.<sup>1</sup> Burning fossil fuels such as coal, oil or natural gas to produce energy, releases CO<sub>2</sub> into the earth's atmosphere. Improving energy efficiency can be one of the easiest and most cost-effective ways of reducing CO<sub>2</sub> emissions. Energy efficiency can be improved by either providing the same level of service with less energy or by providing a greater level of service with the same amount of energy.

Greenhouse gases in the earth's atmosphere trap energy and maintain the earth's surface temperature warmer than it would otherwise be. After water vapour, CO<sub>2</sub> is the most common greenhouse gas in the atmosphere. Other greenhouse gases (methane, nitrous oxide and various compounds containing fluorine) have a greater ability to trap energy but are found in much lower concentrations in the atmosphere. This report focuses on CO<sub>2</sub> as it is the main greenhouse gas emitted through the production of energy and is the greenhouse gas most likely to have the greatest negative effect on the climate.

**2.** Climate change also represents a serious threat to the global economy.<sup>2</sup> A key conclusion of the Stern Review was that, in the long term, the cost of

inaction would be far higher than the cost of addressing climate change now.

**3.** Net greenhouse gas emissions in Scotland fell 13.4 per cent from 68 million tonnes of CO<sub>2</sub> equivalent in 1990 to 59 million tonnes of CO<sub>2</sub> equivalent in 2006, largely due to a reduction in emissions from industry.<sup>3</sup> In 2006, Scotland accounted for 9.1 per cent of the UK's net greenhouse gas emissions.<sup>4</sup> Scotland's Climate Change Programme, published in 2006, identifies Scotland's contribution to UK carbon savings. The contribution to be delivered by devolved policies was calculated as a reduction of 6.2 million tonnes of CO<sub>2</sub> equivalent by 2010. An additional Scottish target was set by the then Scottish Executive to exceed this by achieving a further reduction of 3.7 million tonnes of CO<sub>2</sub> equivalent by 2010.<sup>5, 6</sup>

**4.** A variety of national and international legislation, and policy statements relating to energy efficiency, have been developed ([Appendix 1](#)). In January 2008, the Scottish Government published proposals for legislation on climate change. This included a suggested target to reduce Scotland's greenhouse gas emissions by 80 per cent by 2050 using the base dates established by the Kyoto Protocol.<sup>7</sup> More efficient use of energy will have a key role to play in meeting this target. It is anticipated that a bill will be introduced to the Scottish Parliament by the end of 2008.

**5.** Direct emissions from the public sector account for around two per cent of greenhouse gas emissions

in Scotland.<sup>8</sup> However, this figure does not take into account the emissions resulting from the public sector's use of electricity, transport or waste-related emissions, as these are classified separately. The public sector has a key role to play in leading by example and promoting and improving energy efficiency. It can influence the behaviour of individuals and organisations through various approaches including sustainable procurement strategies, sharing good practice, and training and education.

**6.** In addition to the environmental need to improve energy efficiency, there are also financial considerations. In 2006/07, councils, NHS bodies and central government bodies spent at least £224 million on energy.<sup>9, 10</sup> The price of electricity and gas doubled between July 2004 and June 2008 ([Exhibit 1, overleaf](#)), while the price of petrol increased by around 38 per cent and diesel by 47 per cent between January 2004 and September 2008.<sup>11</sup> Therefore the efficient use of energy can provide a means of delivering more cost-effective public services and can help to tackle the financial challenges associated with rising energy costs. It can also contribute to the annual two per cent efficiency target to be achieved by all public bodies.

**7.** The Scottish Government is now developing a national electricity contract for the public sector to replace the large number of individual contracts currently in place. The aim is that a national contract will minimise the impact of ongoing increases in energy prices by securing electricity

1 *Climate Change 2007: Synthesis Report*, Intergovernmental Panel on Climate Change, 2007.

2 *Stern Review on the Economics of Climate Change*, 2006.

3 CO<sub>2</sub> equivalent provides a universal standard of measurement against which the impacts of releasing different greenhouse gases can be measured.

4 *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland 1990-2006*, AEA Energy and Environment, 2008.

5 *Changing Our Ways: Scotland's Climate Change Programme*, Scottish Executive, 2006. (This target is expressed in tonnes of carbon in Scotland's Climate Change Programme, but has been converted to tonnes of CO<sub>2</sub> equivalent in this report for consistency.)

6 Prior to September 2007, the Scottish Administration was referred to as the Scottish Executive. It is now called the Scottish Government. When dealing with the earlier period this report refers to the Scottish Executive but in all other instances it refers to the Scottish Government.

7 The baseline for CO<sub>2</sub>, nitrous oxide and methane is proposed to be 1990, while hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride are expected to be measured against the 1995 baseline.

8 *Changing Our Ways: Scotland's Climate Change Programme*, Scottish Executive, 2006.

9 This figure is based on £63.1 million for 16 NHS bodies (*Annual National Environment Report 2006/07*, Health Facilities Scotland, December 2007); £125.8 million for 29 councils (Audit Scotland); and £35.6 million for 21 central government bodies (Audit Scotland).

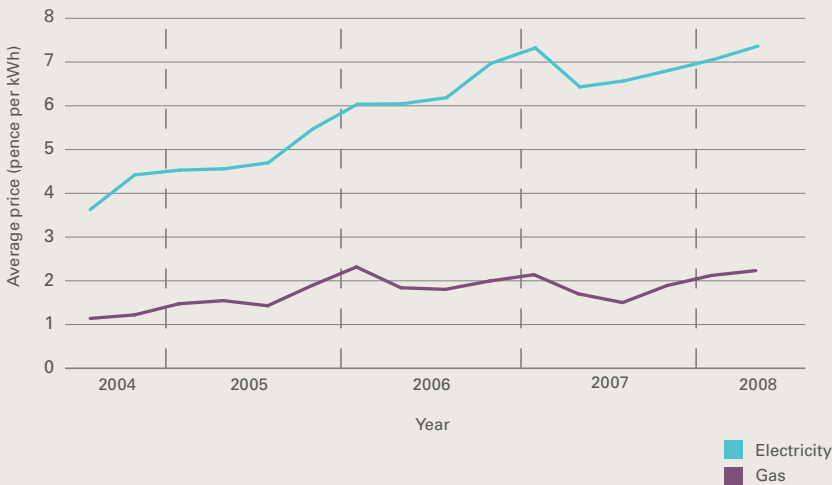
10 The term 'NHS bodies' in this report refers to both territorial and special health boards.

11 *Quarterly Energy Prices*, Department for Business, Enterprise and Regulatory Reform, September 2008.

## Exhibit 1

### Average quarterly price of fuel purchased by non-domestic customers in the UK, 2004-08

Electricity and gas prices have doubled in the past four years.



Source: *Quarterly Energy Prices*, Department for Business, Enterprise and Regulatory Reform, September 2008

at a reasonable price on behalf of all public bodies. This contract went out to tender in August 2008 and it is intended that all public bodies will have moved onto this national contract by March 2010.

### About the study

**8.** This report provides an assessment of how the public sector is improving its energy efficiency in relation to buildings and transport use. The report is organised into two sections:

- Achievements so far (Part 1).
- Delivering improved energy efficiency (Part 2).

**9.** The study assessed councils, NHS bodies and central government bodies, although our recommendations are transferable to other areas of the public sector (ie, the higher and further education sectors, police forces, and fire and rescue services).

**10.** This report draws on various sources, including:

- relevant strategic documents from councils, NHS bodies and central government bodies
- a survey issued to councils, NHS bodies and central government bodies (see Appendix 2 for a list of bodies that completed the survey)
- interviews with relevant staff in a sample of 16 organisations from across these three sectors.

**11.** A project advisory group provided independent advice and feedback at key stages of the project. The membership of the group is shown in Appendix 3.

### Key messages

- The Scottish Government has provided £24 million through the Central Energy Efficiency Fund (CEEF) to support improvements in energy efficiency within the public sector since 2004/05. It also provides annual funding

to the Carbon Trust and Energy Saving Trust to carry out energy efficiency programmes in the public sector. In 2007/08, this funding was an estimated £4 million.

- Public bodies have allocated over £11.5 million of their own funds to invest in energy efficiency measures since 2004/05.
- Energy consumption in public buildings has fallen by 4.8 per cent in the three years to 2006/07 but spending on energy has increased by 46.7 per cent during this period due to significant rises in energy prices.
- Efforts to improve energy efficiency have been greatest in those sectors that spend the most on energy (councils and the NHS) and this is reflected in their performance.
- There is a need for stronger leadership by the Scottish Government and within public bodies to improve energy efficiency and ensure that the necessary cultural and behavioural changes are made. This is a challenge and more work is needed to achieve this.
- A robust strategy is central to the coordination of activities to improve energy efficiency, however, there are inconsistencies in the quality of strategies being implemented.
- The Scottish Government does not formally monitor and report progress by public bodies in improving energy efficiency. This makes it difficult to determine the extent to which the public sector is contributing to the achievement of national targets to reduce emissions.



## Recommendations

The Scottish Government should:

- demonstrate leadership by providing clear guidance for all public bodies on the actions that are required to improve energy efficiency and reduce CO<sub>2</sub> emissions
- establish robust monitoring arrangements to ensure the performance of public bodies in improving energy efficiency can be accurately assessed and reported publicly against national and international targets
- work with the public sector to disseminate good practice, coordinate networks to share information and establish appropriate energy efficiency benchmarks.

The public sector should:

- ensure that effective strategies are in place to improve energy efficiency and reduce CO<sub>2</sub> emissions throughout all areas of public sector activity. These strategies should be supported by comprehensive plans detailing the actions to be taken to achieve agreed objectives and time-related targets
  - ensure that senior staff play a key role in improving energy efficiency and reducing CO<sub>2</sub> emissions through leading on the implementation of strategies
  - identify and implement a coordinated programme to raise awareness of energy efficiency among staff. Public bodies should actively seek expert advice and input to design programmes which focus on encouraging changes in culture and staff behaviour
- ensure staff with the necessary skills are made available to support implementation of energy efficiency activities. Formal reporting frameworks should be used to monitor progress against the aims, objectives and targets outlined in energy efficiency strategies
  - collect accurate and consistent data on energy consumption within all sites which they own or lease and in their transport use. Public bodies in multiple occupancy buildings need to work with landlords and other occupiers to establish procedures for identifying local consumption data
  - ensure that energy efficiency is considered in the procurement of goods and services and in the planning and design of major capital projects.

# Part 1.

## Achievements so far



Public sector energy consumption has fallen but spending has increased significantly.





## Key messages

- The Scottish Government has provided £24 million through the Central Energy Efficiency Fund (CEEF) to support improvements in energy efficiency within the public sector since 2004/05. It also provides annual funding to the Carbon Trust and Energy Saving Trust to carry out energy efficiency programmes in the public sector. In 2007/08, this funding was an estimated £4 million.
- Public bodies have allocated over £11.5 million of their own funds to invest in energy efficiency measures since 2004/05.
- Energy consumption in public buildings has fallen by 4.8 per cent in the three years to 2006/07 but spending on energy has increased by 46.7 per cent during this period due to significant rises in energy prices.
- Efforts to improve energy efficiency have been greatest in those sectors that spend the most on energy (councils and the NHS) and this is reflected in their performance.

## Funding has been made available to improve energy efficiency

**12.** During 2004/05 and 2005/06, the Scottish Executive provided £20 million to support councils, NHS boards and Scottish Water in improving energy efficiency through the CEEF.<sup>12</sup> The Scottish Government also provides annual funding of around £5.5 million to the Carbon Trust and £4.5 million to the Energy Saving Trust to undertake

energy efficiency programmes across the public, private and domestic sectors (**Exhibit 2, overleaf**). Between 2004/05 and 2006/07, over £11.5 million was allocated by councils, NHS bodies and central government bodies to implement energy efficiency measures.

### Over £10 million of the CEEF has been spent on improving energy efficiency since 2004/05

**13.** From the total CEEF made available by the Scottish Executive, £15 million was allocated to councils, £4 million to NHS boards, and £1 million to Scottish Water.<sup>13</sup> These sectors have spent £10.1 million of this fund on projects to improve energy efficiency.

**14.** The Scottish Executive set the following goals for the CEEF (with 2004/05 as the baseline year):

- A 20 per cent reduction in energy consumption by councils and Scottish Water, and a 15 per cent reduction by NHS boards over five years.
- A saving in energy bills over the first five years, estimated at around £70 million (and an ongoing saving of up to £30 million each year thereafter).
- A reduction in CO<sub>2</sub> emissions estimated at around 1.83 million tonnes over the first five years (and around 367,000 tonnes each year thereafter).<sup>14</sup>

**15.** Public bodies have used the CEEF to successfully implement projects to improve energy efficiency such as fitting more efficient lighting, improving the efficiency of boilers

and installing swimming pool covers. The CEEF has also helped to raise the profile of energy efficiency in public bodies and attract additional internal funding which may not have otherwise been made available.

**16.** In 2006, the Scottish Executive commissioned a detailed evaluation of the CEEF within councils. It found that £5.3 million of the allocated £15 million had been spent between January 2005 and September 2006, generating estimated annual savings of £1.3 million and around 13,000 tonnes of CO<sub>2</sub>.<sup>15</sup> If the lifetime effects of the investments made are taken into account, these savings increase to around £22.9 million or 295,000 tonnes of CO<sub>2</sub>.

**17.** An interim evaluation of the CEEF within NHS boards concluded that estimated annual savings of £1.6 million and around 13,000 tonnes of CO<sub>2</sub> have been achieved on the basis of £4.2 million CEEF funding approved between 2005 and 2008.<sup>16</sup>

**18.** Scottish Water has spent just over £600,000 of its allocated CEEF fund on three small hydro turbine projects. It is estimated that these projects will result in an annual saving of £223,000 and 1,963 tonnes of CO<sub>2</sub>.<sup>17</sup>

**19.** These savings indicate that the ambitious goals set for the CEEF are unlikely to be met. The evaluation of the CEEF, commissioned by the Scottish Executive in 2006, found that funding of around £50 million would have been required to achieve energy savings worth £70 million in five years. Achieving a reduction of 1.83 million tonnes of carbon emissions would require significantly higher investment of around £118 million.<sup>18</sup> This analysis shows that

12 In March 2007, the Scottish Executive agreed to extend the scheme to provide an additional £4 million to the further and higher education sectors.

13 The original allocation of £4 million CEEF funding was to the 14 NHS boards. However, the Scottish Government Health Directorates have indicated that they will consider bids for funding from The National Waiting Times Centre and The State Hospitals Board for Scotland. To date, The National Waiting Times Centre has had one bid authorised to the value of £106,000. Each NHS board also received an additional one-off revenue payment of £30,000 to pay the first year's salary of an energy manager.

14 The Scottish Executive expressed this target in tonnes carbon, but it has been converted to tonnes CO<sub>2</sub> in this report for consistency.

15 *Evaluation of the Central Energy Efficiency Fund*, Report to the Scottish Executive by AEA Energy and Environment, March 2007.

16 *Central Energy Efficiency Fund Assessment Panel Annual Report of CEEF within NHS Scotland*, Health Facilities Scotland, June 2008.

17 The estimated lifetime savings resulting from CEEF investments made within the NHS and Scottish Water are not available.

18 *Evaluation of the Central Energy Efficiency Fund*, Report to the Scottish Executive by AEA Energy and Environment, March 2007.

the goals set for the CEEF were inconsistent and unrealistic in the context of the money allocated to the fund.

**20.** One of the criteria for CEEF projects is that they must generate savings equivalent to their cost within five years. In the initial stages this may have been appropriate to accelerate improvements in energy efficiency. However, it may become too restrictive as it will be increasingly difficult to identify future projects which meet this requirement. Extending the payback period may allow investment in those larger-scale projects which could achieve greater total energy and cost savings. However, if energy costs continue to increase, the resulting payback period could reduce as greater savings are made in a shorter space of time. The Scottish Government is currently exploring options for extending the payback period and expanding the list of technologies eligible for the CEEF.

**£4 million has been spent on providing information and support to the public sector in 2007/08**

**21.** In addition to the investments through the CEEF, the Scottish Government provides funding to the Carbon Trust and the Energy Saving Trust. These organisations undertake energy efficiency programmes across the public, private and domestic sectors (**Exhibit 2**). The Carbon Trust estimates that around £1.4 million was used to fund the work it carried out in the public sector during 2007/08. The Energy Saving Trust estimates that £2.6 million was used to support its activities in the public sector during the same year.

**22.** The Carbon Trust and Energy Saving Trust have focused their attention on those public bodies where energy consumption and CO<sub>2</sub> emissions are highest. All councils have accessed advice from the

## Exhibit 2

### The role of the Carbon Trust and Energy Saving Trust

#### The Carbon Trust

The UK Government established the Carbon Trust in 2001 and the Scottish Government funds its work in Scotland. It works with public bodies and businesses to identify their CO<sub>2</sub> emissions and provides advice and support to help reduce them. The Carbon Trust offers a range of services, including surveys of premises by consultants to identify potential energy savings, advice on building design, and training workshops.

#### The Energy Saving Trust

The Energy Saving Trust is a UK-wide non-profit organisation established in 1993. The Scottish Government funds its work in Scotland. Its aim is to cut CO<sub>2</sub> emissions by promoting the sustainable and efficient use of energy. The Energy Saving Trust focuses its work on the domestic sector but also works closely with councils, housing associations and the voluntary sector to help identify opportunities to improve energy efficiency, especially within the housing sector. The Energy Saving Trust also offers free advice to public bodies on vehicle fleet management and developing green travel plans.

Source: Carbon Trust and Energy Saving Trust

Carbon Trust, as have 76 per cent of NHS bodies and 67 per cent of central government bodies. Nearly 80 per cent of councils, 39 per cent of central government bodies and 24 per cent of NHS bodies have sought advice from the Energy Saving Trust.

**23.** The Carbon Trust has developed a carbon management programme for use in the public sector. This programme provides support through a five-step process to help reduce CO<sub>2</sub> emissions (**Exhibit 3**). Public bodies that participate may also access support from consultants to help implement the programme. To date, 23 councils have completed the programme and the remaining nine are currently participating. One NHS board (NHS Grampian) has completed the programme and half of the remaining NHS boards have started it. The Scottish Environment Protection Agency is the only central government body to complete the programme, and the Scottish Government has recently started it.

**24.** Participation in the programme has:

- helped public bodies secure senior level commitment to reducing CO<sub>2</sub> emissions
- given a strategic focus to reducing energy consumption and related CO<sub>2</sub> emissions
- helped public bodies to prioritise activities to improve energy efficiency.

**25.** The Carbon Trust estimates that the work it has conducted with public bodies resulted in a reduction of 43,500 tonnes of CO<sub>2</sub> and savings of £3.9 million in 2006/07.

**Public bodies have allocated over £11.5 million of their funds to improve energy efficiency since 2004/05**

**26.** Just over a third of public sector bodies have a specific local budget for investment in energy efficiency measures. Between 2004/05 and 2006/07, councils allocated over £9.3 million to improve their energy

**Exhibit 3**

## Five stages of the carbon management programme



Source: Carbon Trust

efficiency. Over the same period, NHS bodies allocated over £1.8 million and central government bodies allocated over £500,000.

**27.** Internal funding may also be available through facilities and estates budgets. However, bids for funding to improve energy efficiency often have to compete with other high-priority

areas such as health and safety and general estate refurbishment work.

**28.** The installation of more energy efficient equipment and technology may also be carried out as part of a wider major refurbishment or refit project. Implementation of these energy efficiency measures is often included as part of the capital cost of

the project and may not be separately identified. Therefore investment by public bodies to improve energy efficiency is likely to be greater than £11.5 million.

**Energy consumption has fallen but expenditure has risen**

**29.** Energy consumption within public sector buildings is estimated to have reduced overall by around 4.8 per cent over the three years to 2006/07 (Exhibit 4, overleaf). This has resulted in an estimated 0.3 per cent reduction in CO<sub>2</sub> equivalent emissions.<sup>19</sup> This has been delivered at the same time as changes in service provision, such as the use of more advanced technology and longer opening hours, which may have increased the demand for energy. Despite the overall reduction in public sector energy consumption, there has been a three per cent increase in energy consumption among central government bodies.

**30.** The overall reduction in energy consumption by the public sector has not resulted in a reduction in expenditure. Public sector expenditure on energy has risen by 46.7 per cent over the same period due to the significant rise in energy prices over recent years (Exhibit 4, overleaf).

**31.** By area, the NHS is the greatest energy consumer (467 kWh/m<sup>2</sup>) when compared to the central government (277 kWh/m<sup>2</sup>) and council (241 kWh/m<sup>2</sup>) sectors. This may be due to a number of factors, including the requirement to heat and light hospital buildings 24 hours a day, and the energy intensive equipment which is used in the NHS. This sector also has the highest energy cost by area (£18/m<sup>2</sup>) followed by central government (£14/m<sup>2</sup>) and councils (£10/m<sup>2</sup>).<sup>20</sup>

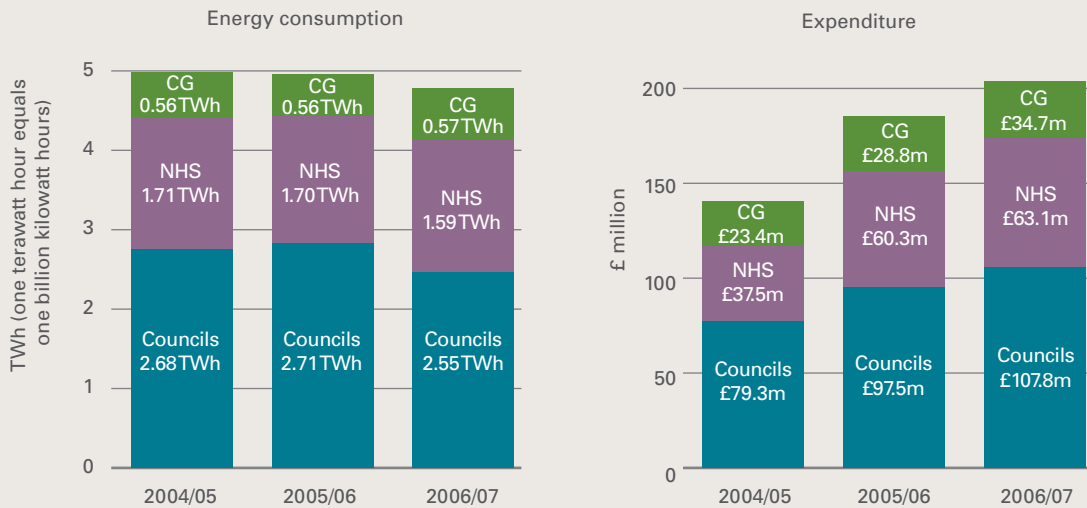
<sup>19</sup> The reduction in CO<sub>2</sub> equivalent emissions is not proportionate to the reduction in energy consumption because of the changes in the balance of energy (ie, electricity, gas and oil) consumed by the public sector between 2004/05 and 2006/07. Each energy source emits different levels of greenhouse gases, therefore the UK Government's greenhouse gas conversion factors have been used to calculate the resulting CO<sub>2</sub> equivalent emissions.

<sup>20</sup> Audit Scotland and Health Facilities Scotland data (source data relates to 2006/07).

## Exhibit 4

### Changes in energy consumption and expenditure across the public sector from 2004/05 to 2006/07

There has been a 4.8 per cent reduction in energy consumption, while expenditure has increased by 46.7 per cent.



Note: This is based on a sample of 22 councils, 16 NHS bodies and 11 central government bodies which provided individual consumption and expenditure data for each energy source used (ie, gas, electricity and oil) over three years. It does not include gas consumption data for Scottish Water as data were not available for 2004/05. The NHS data only reflect consumption and expenditure in hospitals. The total energy expenditure figure quoted in the summary section of this report is based on data provided for 2006/07 where the sample size was greater.

Source: Audit Scotland; *Annual National Environment Report 2006/07*, Health Facilities Scotland, December 2007

### More accurate information on energy consumption is needed

**32.** Public bodies have reported concerns over the accuracy of utility bills. However, only 68 per cent of public bodies collect meter readings across their estate to provide accurate data on energy use and to validate utility bills.

**33.** The size and complexity of the public sector estate presents challenges in accurately monitoring energy consumption. The council estate has just under 18,000 buildings, the NHS has more than 1,000 buildings and there are about 5,150 buildings in the central government estate (Scottish Water accounts for approximately 4,500 of these buildings).<sup>21</sup> In order to collect

consumption data, meters either have to be read manually by staff or automatically. Only 27 per cent of public bodies have installed automated systems and so the majority need to undertake manual readings.

**34.** In 2007, the Scottish Government launched a pilot project in 12 councils and Scottish Water to test various automated metering systems. The pilot aimed to reduce uncertainty about automated systems and identify which systems provided the best value for money in improving energy efficiency. The pilot sites have identified the best metering technologies for their estates, and are now expected to invest in these systems through their existing CEEF allocation.

**35.** Around three-quarters of public bodies share floor space in at least one of their buildings with another organisation. It can be difficult to identify accurate consumption data in buildings where more than one organisation occupies the building. In buildings which are leased from private landlords, energy costs are often included as part of an annual management fee. Public bodies sharing or leasing buildings are starting to work with landlords in order to obtain local consumption data. Sub-metering technology is a means of acquiring meter readings for specific areas of a property, and could be particularly useful for public bodies which sub-let part of a building.

**36.** Around 75 per cent of public bodies have a vehicle fleet, however, just over half of these have established systems to monitor fuel consumption and resulting emissions. Even fewer have broadened these systems to incorporate business travel and staff commuting. A number of departments, including fleet management, finance and human resources, hold information on transport use. However, public bodies have often not identified a lead to collate these data.

### Recommendations

The public sector should:

- collect accurate and consistent data on energy consumption within all sites which they own or lease and in their transport use. Public bodies in multiple occupancy buildings need to work with landlords and other occupiers to establish procedures for identifying local consumption data.

# Part 2. Delivering improved energy efficiency



Strong leadership is vital to improve energy efficiency.





## Key messages

- There is a need for stronger leadership by the Scottish Government and within public bodies to improve energy efficiency and ensure that the necessary cultural and behavioural changes are made. This is a challenge and more work is needed to achieve this.
- A robust strategy is central to the coordination of activities to improve energy efficiency, however, there are inconsistencies in the quality of strategies being implemented.
- The Scottish Government does not formally monitor and report progress by public bodies in improving energy efficiency. This makes it difficult to determine the extent to which the public sector is contributing to the achievement of national targets to reduce emissions.

## Strong leadership is vital to improving energy efficiency

**37.** The Scottish Government established a national performance framework in 2007. It sets out the Scottish Government's purpose and its five key strategic objectives. In order to assess performance against its purpose, a number of targets have been established including two relating to greenhouse gas emissions:

- To reduce emissions over the period to 2011.
- To reduce emissions by 80 per cent by 2050.

**38.** All public bodies have a role to play in meeting these targets. However, the Scottish Government has provided limited direction and guidance to promote improved energy efficiency in the public sector.

**39.** In March 2007, the Scottish Executive consulted on a draft Energy Efficiency and Microgeneration Strategy, setting out how it intended to support the public sector in improving energy efficiency through:

- encouraging greater energy efficiency in the public sector estate
- providing additional funding to support implementation of energy efficiency measures
- requiring targets to be established to reduce CO<sub>2</sub> and other greenhouse gas emissions
- seeking ways to promote energy efficiency during the procurement process.

**40.** The Scottish Government has decided not to publish a final strategy but intends to develop an action plan instead to identify the actions that need to be taken to improve further energy efficiency in the public sector. This will take into account the consultation responses to the draft Energy Efficiency and Microgeneration Strategy, the independent review of energy efficiency support in Scotland, and the consultation on the Scottish Climate Change Bill.

## Various approaches are being taken to improve energy efficiency

**41.** All councils have identified the need to reduce CO<sub>2</sub> emissions within their Single Outcome Agreements which have been agreed with the Scottish Government. Some Single Outcome Agreements include specific targets to reduce energy consumption while others have broad aims to reduce ecological footprints. Reducing CO<sub>2</sub> emissions in councils will contribute to the Scottish Government's national outcome of reducing the "*local and global environmental impact of our consumption and production*," as well

as the targets relating to greenhouse gas emissions.

**42.** All councils signed Scotland's Climate Change Declaration in 2007, which includes a commitment to prepare and publish local plans (with targets and timescales) to achieve a significant reduction in greenhouse gas emissions resulting from council operations.<sup>22</sup> It also commits councils to publish an annual statement on progress in addressing climate change. All councils are expected to report on progress by April 2009.

**43.** The Local Government in Scotland Act 2003 requires councils to deliver Best Value, and sustainable development is a fundamental part of this. The Sustainable Scotland Network has developed a toolkit which councils can use to ensure that sustainable development is part of core business practices, through looking at issues such as energy use and climate change.

**44.** Since 2001, the Scottish Executive Health Department (now the Scottish Government Health Directorates) has required a two per cent reduction in annual energy consumption until 2010. In order to achieve this target, NHS bodies are required to:

- develop and implement an environmental management strategy
- implement green travel plans
- develop a programme to fund the necessary investments
- implement a system to measure energy consumption and CO<sub>2</sub> emissions.

**45.** The Scottish Government has delegated responsibility for monitoring the environmental performance of the NHS to Health Facilities Scotland. Health Facilities Scotland submits a

<sup>22</sup> The Declaration was developed by a partnership of ten organisations consisting of the Scottish Government; Convention of Scottish Local Authorities (COSLA); Society of Local Authority Chief Executives (SOLACE) – Scotland; Improvement Service; Sustainable Scotland Network; Energy Saving Trust; Carbon Trust; Local Energy Support Programme; UK Climate Impacts Programme; and the Scotland and Northern Ireland Forum for Environmental Research (SNIFFER).

summary of its annual environment report to the Scottish Government each year. All NHS boards and two special health boards (The State Hospitals Board for Scotland and The National Waiting Times Centre Board) report through Health Facilities Scotland against the national NHS target to reduce energy consumption by two per cent each year between 2001 and 2010. In 2006/07, the NHS achieved a reduction of 1.9 per cent against the previous year.<sup>23</sup> Between 2003/04 and 2006/07 there was an overall reduction of 8.1 per cent in energy consumption across the NHS.<sup>24</sup>

**46.** In 2004, the Scottish Executive established the Environmental Performance of Public Bodies Initiative. As part of this Initiative, non-departmental public bodies (NDPBs) and agencies (which have assets that they manage directly) were required to adopt environmental management policies with specific environmental targets for 2006/07 and report their performance annually. The Scottish Government publishes the information supplied by central government bodies on its website. To date, 39 out of 51 central government bodies have submitted policies. This Initiative has had limited impact to date due to:

- no clear guidance to central government bodies to ensure robust policies and targets are established
- limited staff resource within the Scottish Government to work with these public bodies to ensure submission of appropriate performance reports and to conduct a review of annual progress against targets
- no system to monitor and assess performance

### Case study 1 – an environmental steering group in the Scottish Environment Protection Agency

The Scottish Environment Protection Agency has an Internal Environmental Policy Implementation Group (IEPIG) which was established in 2000. The role of the IEPIG is to steer the implementation of the internal environmental policy (including improving energy efficiency) and to monitor progress.

The group was chaired by the Chief Executive until it became established, demonstrating senior management commitment to the environmental policy agenda. The IEPIG is now chaired by the Director of Environmental and Organisational Strategy, and includes senior management representation from across the organisation, including the Head of Procurement, Facilities and Estates. There is a clear reporting channel to the corporate management team and the board. This ensures that the group is able to take decisions forward with the full support of senior management.

Source: Audit Scotland

- no requirement on public bodies to provide evidence to verify their performance.

**47.** The Scottish Government is beginning to develop methods to monitor and assess the performance of central government bodies.

**48.** The Scottish Government is working with the UK Government and other devolved administrations to introduce the UK Carbon Reduction Commitment (CRC) which is a mandatory emissions reduction scheme that will promote energy saving. All public bodies which spend over £500,000 each year on electricity will be included in the scheme. Therefore most councils and NHS boards, and some of the larger central government bodies, will be required to participate. As part of the scheme, public bodies will have to monitor and report all emissions relating to energy use from October 2009. This information will then be verified and used to prepare an annual UK-wide

report on performance. However, the report will not specifically focus on the public sector (or include all public bodies) and will therefore not provide a comprehensive tool for assessing public sector performance.

**Cultural and behavioural change is necessary to improve energy efficiency**

**49.** Leadership at senior levels (for example by appointing energy 'champions' at board level) is essential to ensure the necessary behavioural and cultural changes take place within public bodies to improve energy efficiency (see Case study 1 on the Scottish Environment Protection Agency above).

**Nearly two-thirds of public bodies have an energy management team or officer in place**

**50.** Public bodies are demonstrating their commitment to improving energy efficiency by establishing energy steering groups and appointing dedicated energy teams or officers:

<sup>23</sup> Annual National Environment Report 2006/07, Health Facilities Scotland, December 2007. This figure is climatically adjusted to take the effect of weather into consideration – the actual reduction in consumption was 6.3 per cent.

<sup>24</sup> Annual National Environment Reports 2003/04-2006/07, Health Facilities Scotland. This figure is climatically adjusted – the actual reduction in consumption for this time period was 9.6 per cent.

- 61 per cent of public bodies have a team or officer responsible for energy management
- 58 per cent have a steering group with a remit covering energy issues
- 42 per cent have both an energy management team or officer and a steering group
- 23 per cent do not have either an energy management team or officer or a steering group.

**51.** There is variation in the extent to which these arrangements have been established across the public sector. In 90 per cent of councils, an energy management officer or team is in place, compared to only 59 per cent of NHS bodies and 36 per cent of central government bodies.

**52.** Time devoted to energy management varies across the public sector – 72 per cent of energy officers (or equivalent) in councils spend more than half their time on energy issues,

whereas in NHS bodies and central government bodies this reduces to 15 per cent and four per cent respectively ([Exhibit 5](#)).

**53.** In 2008, the Carbon Trust produced a best practice model for councils which outlines the key functions of an energy management team ([Exhibit 6, overleaf](#)). This notes that public bodies must “ensure that sufficient resources are in place so that the primary energy management objectives are not compromised by other demands on the energy management team”.<sup>25</sup>

**54.** The roles and responsibilities of energy officers and teams differ across the public sector and there are varying levels of expertise among this group. Furthermore, public bodies are facing challenges in recruiting and retaining staff in energy management teams due to a shortage of experienced energy management professionals.<sup>26</sup> This may be a barrier to public bodies in improving their energy efficiency and reducing CO<sub>2</sub> emissions.

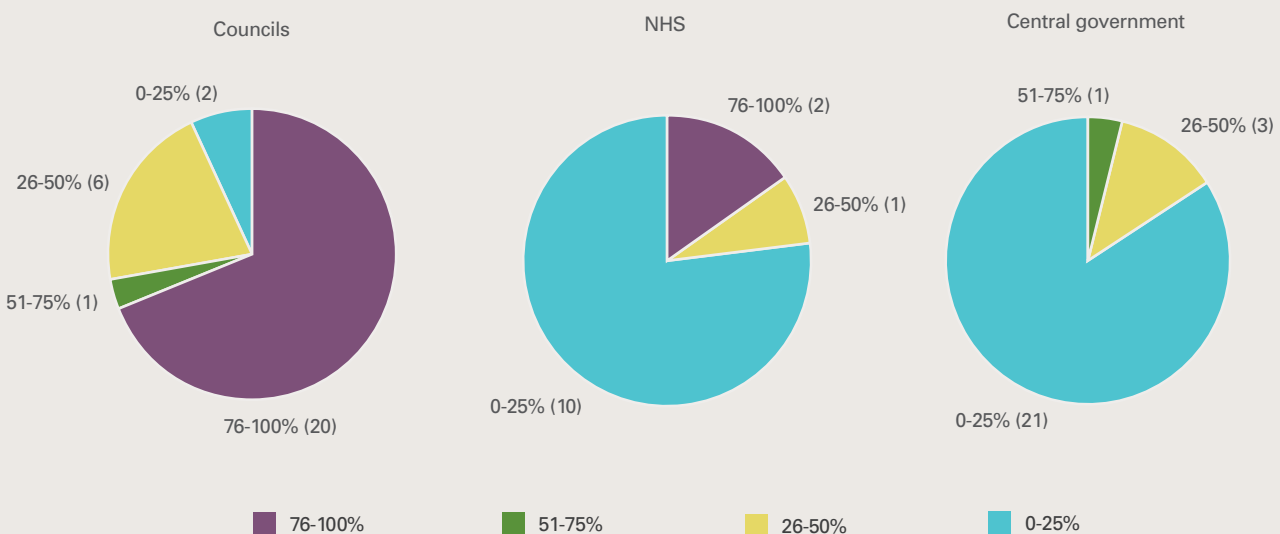
**55.** It is the responsibility of all staff to improve energy efficiency. Simple actions such as using video conferencing facilities and switching off computer monitors when not in use can contribute to improving energy efficiency. Public bodies therefore need to improve staff awareness and change the culture and behaviour of individuals in order to reduce energy consumption, particularly in relation to the use of transport.

**56.** Local ‘champions’ are one method of promoting improved energy efficiency. Champions are members of staff charged with encouraging behavioural change and increasing ownership of energy efficiency among colleagues. However, only a small number of public bodies have identified champions with the necessary training and allocated time to ensure this role can be carried out effectively. In addition, this role is often voluntary and the limited authority delegated to these individuals is likely to restrict their effectiveness.

### Exhibit 5

#### Percentage of time spent on energy management by energy officer (or equivalent)

Energy officers in councils spend the most time on energy issues.



Source: Audit Scotland

<sup>25</sup> An Energy Management Best Practice Model for Scottish Local Authorities, Carbon Trust, 2008.  
<sup>26</sup> An Energy Management Best Practice Model for Scottish Local Authorities, Carbon Trust, 2008.

## Exhibit 6

### Key functions of an energy management team

- Ongoing monitoring and reporting on energy use, energy cost and related carbon emissions through the use of appropriate energy metering, monitoring and analysis tools and systems.
- Using the same systems, benchmarking of building performance and the identification of exceptions in performance and the instigation of appropriate corrective actions.
- The management of energy supply contracts and connection agreements for the procurement of energy.
- Provision of energy management services, support, training and advice to individual client departments.
- Identification of opportunities for reducing energy consumption and for using alternative lower carbon sources of energy.
- Maintaining a list of energy-saving investment opportunities.
- The driving forward of identified opportunities to implementation.
- Keeping abreast of, and managing, relevant regulatory or government policy requirements.
- Approval of equipment purchases from an energy efficiency perspective as per the public body's sustainable procurement procedures.
- Identification of sources of external funding for energy efficiency investment and support, and ensuring that the public body takes full advantage of such sources as appropriate.
- Involvement in the specification of energy efficient features in maintenance operations, plant replacements, building refurbishments and in new builds.
- Ongoing liaison as required with other departments in furtherance of the objectives of the energy policy and implementation of the energy strategy.
- Keeping abreast of technical developments that may offer new opportunities for energy or carbon savings.

Source: *An Energy Management Best Practice Model for Scottish Local Authorities*, Carbon Trust, 2008

**57.** Since it was piloted in 2006, 11 councils have accessed a staff training tool developed by the Energy Saving Trust which aims to change attitudes and behaviour towards energy use. Energy efficiency is not widely included within staff induction programmes. This mechanism could ensure that new staff are aware of the organisation's requirement to manage energy efficiently and further help to mainstream this area of work.

### Most public bodies have energy efficiency strategies but they vary in quality

**58.** An effective strategy can help coordinate activities to improve energy efficiency. Public bodies which have good energy efficiency strategies in place:

- have clear responsibilities for energy management at strategic and operational levels

- use awareness raising methods
- use energy information systems to monitor progress
- make available funds for initiatives to reduce energy and consider energy efficiency in maintenance procedures.

**59.** Around 70 per cent of public bodies have a specific strategy to improve their energy efficiency and reduce CO<sub>2</sub> emissions, although they vary in quality. Of those without a strategy, central government bodies account for 19 per cent, NHS bodies six per cent and councils three per cent. Many of the strategies include aspects of good practice ([Exhibit 7](#)), however, few cover all aspects.

**60.** Strategies developed by councils and NHS boards tend to be higher quality than those in central government bodies and special health boards, when assessed against a list of key criteria outlining low, medium and high performance ([Exhibit 8](#)). This is likely to reflect their higher level of expenditure on energy. Some central government bodies (such as the Scottish Environment Protection Agency and Scottish Natural Heritage) display good practice in relation to the strategies in place.

**61.** Although NHS bodies have been supplied with specific national guidance on the development of local environmental policies, there are still around a fifth of NHS bodies with low quality strategies. This may be due to a lack of focus on improving energy efficiency or limited staff resource to develop comprehensive strategies. Also, 21 per cent of NHS bodies and 13 per cent of central government bodies did not provide sufficient evidence to assess the quality of their strategies.

**62.** The focus of strategies varies, for example, some are specific to energy efficiency while others form part of a wider environmental policy.

## Exhibit 7

### Good practice criteria for energy strategies

- Senior executive sign-off should be obtained, preferably from the chief executive. This stresses the importance of the strategy and ensures it is carried forward throughout the public body.
- Those responsible for delivering the strategy within the public body must be clearly identified. Ideally this should include a senior executive and/or member representative, an energy manager and an energy management group.
- Clear objectives and targets should be set. It is useful to have a high-level 'headline' target (eg, the public body will reduce its energy consumption by ten per cent by 2010). Objectives and targets should also be stated in quantitative terms (eg, tonnes CO<sub>2</sub>, percentage emissions reduction) and measured against a baseline. Targets should reflect national priorities.
- The strategy must describe a clear process by which the targets will be achieved (eg, an action plan).
- There should be evidence that the strategy is implemented across the organisation, as appropriate, feeding into all activities with significant impacts on energy use.
- Delivery of energy savings will require investment of some sort, in both staff time and capital expenditure. The investment plan for this should be clearly laid out, including details such as minimum/maximum payback periods that are acceptable.
- Arrangements for measuring, managing and reporting progress should be set out. Setting the most appropriate baseline and units of measurement are essential and are best achieved at the policy level.
- A review date is essential to a good strategy, as it ensures the approach is up to date and the information and situation it is based on are accurate.

Source: AEA report for Audit Scotland, July 2008

## Exhibit 8

### Quality of strategies by sector

Strategies developed by councils tend to be higher quality.

	High	Medium	Low	Insufficient evidence
Councils	37%	48%	15%	0%
NHS bodies	32%	26%	21%	21%
Central government bodies	23%	36%	28%	13%

### Assessment criteria used to identify performance

Performance level	Assessment criteria
High performance	<ul style="list-style-type: none"> <li>• Written energy policy (endorsed by top management)</li> <li>• Reviewed at least every three years</li> <li>• Action plan in place</li> <li>• Evidence of commitment across departments</li> <li>• Targets reflect national priorities</li> </ul>
Medium performance	<ul style="list-style-type: none"> <li>• Formal energy policy (endorsed at a high level)</li> <li>• No regular schedule for review</li> <li>• Action plan being developed</li> </ul>
Low performance	<ul style="list-style-type: none"> <li>• Energy policy set by energy manager (or equivalent)</li> <li>• No action plan evident</li> </ul>

Source: AEA report for Audit Scotland, July 2008



**63.** Strategies refer to a wide range of legislation and policies including Scotland's Climate Change Declaration, the UK Government White Paper on Energy, the EU Energy Performance of Buildings Directive, and the international Kyoto Protocol. The policy framework in relation to environmental performance is complex and limited guidance is provided to assist public bodies in applying this at a sector level.

**64.** Based on the information collected from the fieldwork sites, there is little evidence to suggest comprehensive consultation processes were undertaken within public bodies during the development of strategies or that they have been widely publicised to staff following approval.

#### Energy efficiency strategies are not always integrated with other plans

**65.** The integration of energy strategies into corporate and operational plans is uncommon, particularly within NHS bodies and central government bodies. Where it does occur, it tends to be within broader environmental and sustainable development strategies. Ten councils include energy efficiency targets in their corporate plans, and a further 12 highlight improving energy efficiency as an objective. This may help to ensure that energy efficiency receives a higher level of attention, and activities to reduce consumption are prioritised.

**66.** Energy and estate teams generally include reference to improving energy efficiency in their operational plans as this forms a core aspect of their work. However, public bodies have not extended this to include all departments or services. Specifying energy efficiency objectives in all local operational plans may ensure energy efficiency is recognised as an organisation-wide issue. For example, Scottish Natural Heritage has included the reduction of CO<sub>2</sub> emissions into its business planning system and all departments are required to allocate resources to meet this objective.

### Case study 2 – energy action plan in Glasgow City Council

Glasgow City Council has an action plan which supports its energy policy and objectives in its corporate plan. The action plan outlines initiatives aimed at reducing energy consumption and costs and raising staff awareness of the importance of improving energy efficiency. The plan includes high-level initiatives with underpinning aims and actions, and allocates a lead officer and target date to each action. For example:

Initiative	Record energy consumption on a regular basis
Aims	<p>To plot energy use from meter readings against the reading date to identify exceptions, allowing any problems to be identified and rectified early.</p> <p>To demonstrate clear support from senior management through the reporting of energy consumption and performance at management meetings and staff briefings.</p>
Actions	<p>Record all accessible meter readings for utilities on the same date every month to establish true energy consumption and provide early warning of leaks/excessive usage.</p> <p>Report monthly meter readings to the council's energy efficiency unit for collation and account validation.</p> <p>Display meter readings on a graph for year-on-year comparison showing energy trends and highlighting significant variances.</p>

Source: Audit Scotland

#### Few public sector bodies have action plans to deliver their energy efficiency strategies

**67.** Few public bodies have an organisation-wide action plan outlining how objectives and targets to improve energy efficiency will be achieved or who is responsible for taking these forward ([Case study 2 provides details of Glasgow City Council's energy action plan](#)). As a result, there is often a lack of prioritisation and coordination of energy efficiency activities. However, more public bodies have energy efficiency action plans which focus on individual building and maintenance projects, and are managed by estates and facilities staff.

#### Over two-thirds of public bodies have established targets to improve energy efficiency but just over half are confident of meeting them

**68.** Just over 70 per cent of public bodies (76 per cent of councils, 71 per cent of NHS bodies, and 67 per cent of central government bodies) have set targets aimed at improving energy efficiency. Of these, 44 per cent have targets relating just to buildings (eg, reducing electricity consumption), 25 per cent have targets relating to buildings and transport, and one per cent have targets relating just to transport (eg, reducing CO<sub>2</sub> emissions from the vehicle fleet).



**69.** There is no national target and very few local targets to reduce consumption associated with transport. Public bodies acknowledge this is an important issue but recognise that it requires cultural change by both organisations and staff to alter the way in which they operate (eg, promotion of car sharing, video conferencing, use of public transport). See Case study 3 on transport initiatives in NHS Lothian.

**70.** Of those public bodies which have established targets, 56 per cent indicated confidence in meeting those targets (Exhibit 9). However, 11 per cent noted a lack of confidence in meeting their targets. This was attributed to a number of issues including an expansion in estate or vehicle fleet, an increase in staff numbers, and requirements to use more energy-intensive technology.

**71.** Where targets have been established, the frequency of reporting against them is variable. Of those public bodies with targets, 61 per cent report progress to senior management teams monthly or quarterly, 32 per cent report six-monthly or annually, and seven per cent report on an ad hoc basis or not at all. Ad hoc reporting arrangements make it difficult to monitor what progress has been made in improving energy efficiency.

**72.** There is limited use of benchmarks within the public sector to compare performance on energy efficiency. Performance in NHS boards is reported against an indicator which allows direct comparison across all sites. This indicator takes into account energy use related to floor area and type of building (eg, hospital ward, laundry), and indicates where improved efficiency might be possible. In 2006/07, this indicator suggested that only one NHS board (NHS Tayside) achieved a good outcome.<sup>27</sup>

**Case study 3 – transport initiatives in NHS Lothian**

A number of initiatives have been developed in NHS Lothian in conjunction with its Green Travel Plan, encouraging staff and patients to use more sustainable forms of transport. These initiatives include:

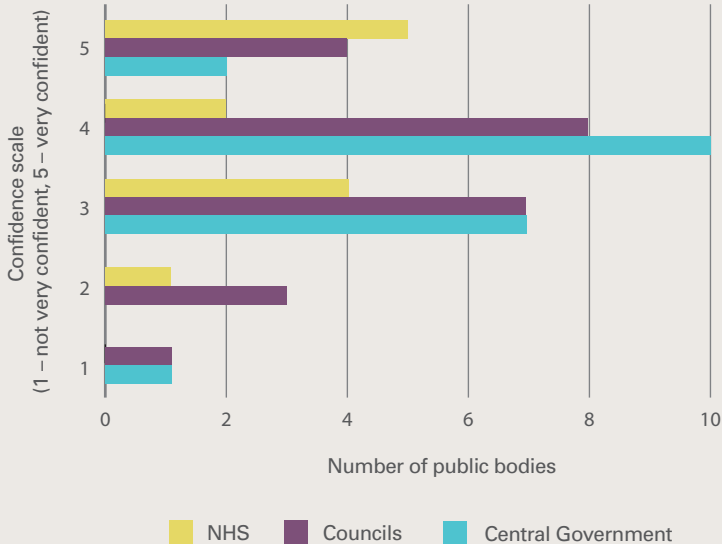
- a car-sharing scheme for staff
- a shuttle bus for staff that runs between the main hospital sites
- a night-time in-house taxi service for staff to travel between NHS Lothian sites
- the promotion of video and teleconferencing
- funding a bus route between two of the main hospital sites.

NHS Lothian has already identified a positive impact resulting from some of these initiatives. For example, data on staff travel suggest that a shuttle bus for staff that runs between the main hospital sites has helped reduce the reliance on taxis and single-occupancy car journeys over the last three years. Also, monthly data on taxi spend suggest that a night-time in-house taxi service for staff, which was launched in January 2008, has resulted in a decrease in the use of private taxis.

Source: Audit Scotland

**Exhibit 9  
Confidence in meeting targets**

Just over half of public bodies are confident about meeting energy efficiency targets.



Source: Audit Scotland

**73.** Around 60 per cent of councils and 30 per cent of central government bodies suggest within their energy efficiency policies and action plans that some form of benchmarking is used. However, there appears to have been limited use of benchmarks and where these do exist, they are not consistent, making it difficult for performance to be compared within and across sectors.

#### Some sectors are sharing best practice

**74.** At an operational level, networks exist within both the council and NHS sectors to disseminate and share best practice and information on improving energy efficiency. However, the opportunities to share information and advice on improving energy efficiency within the central government sector are more limited. During 2004/05, the Scottish Executive established an environmental management forum to support central government bodies participating in the Environmental Performance of Public Bodies Initiative. However, this forum has not met since March 2007. It is important that networks are put in place within the central government sector where there is limited external support from bodies such as the Carbon Trust and Energy Saving Trust.

**75.** In May 2008, the Scottish Government announced, as part of its Greener strategic objective, the development of a Leading By Example Programme to improve environmental performance across the public sector. This should provide an opportunity to share knowledge and experience across the public sector. It may also help the Scottish Government to ensure there is a consistent approach to improving environmental performance and that robust environmental management policies are adopted across the public sector.

#### Energy efficiency is not always considered when buying goods and services or planning major capital projects

**76.** Not all public bodies are considering energy efficiency when buying goods and services.

- Just over half of public bodies have guidelines which state that energy efficiency should be considered when buying office equipment.
- Around 60 per cent of public bodies have guidelines which state that energy efficiency should be considered when buying machinery and buildings.
- Of those public bodies that have a transport fleet, 68 per cent have guidelines which state that energy efficiency should be considered when buying vehicles.

**77.** Even where energy efficiency is reflected in these guidelines, public bodies do not necessarily have robust monitoring procedures in place to ensure that staff are complying with guidelines during the purchasing process.

**78.** The public sector faces a number of challenges in ensuring that energy efficiency is always considered when buying goods and services.

- Those responsible for procurement often have limited awareness of energy efficiency and very few energy officers (or equivalent) are directly involved in the procurement process.
- Some energy efficient options may be more expensive in the short term but provide better value for money over their whole life.

**79.** Public bodies are buying some goods and services through national purchasing arrangements established by national centres of expertise and collaborative contracts (eg, the National Procurement Division of NHS National Services Scotland coordinates national contracts for the NHS for some goods and services). The Scottish Government has provided guidance on how to take account of energy efficiency when establishing national and local procurement arrangements.

**80.** Public bodies need to ensure that new builds and major redevelopment projects are carried out in accordance with national building standards, which include reference to minimum energy efficiency standards and CO<sub>2</sub> emission levels. Public bodies are also beginning to develop checklists to encourage consideration of environmental impacts and to set targets for environmental performance. Some public bodies are using the Building Research Establishment Environmental Assessment Method (BREEAM) to understand and minimise the environmental impact of any new building or major refurbishment.

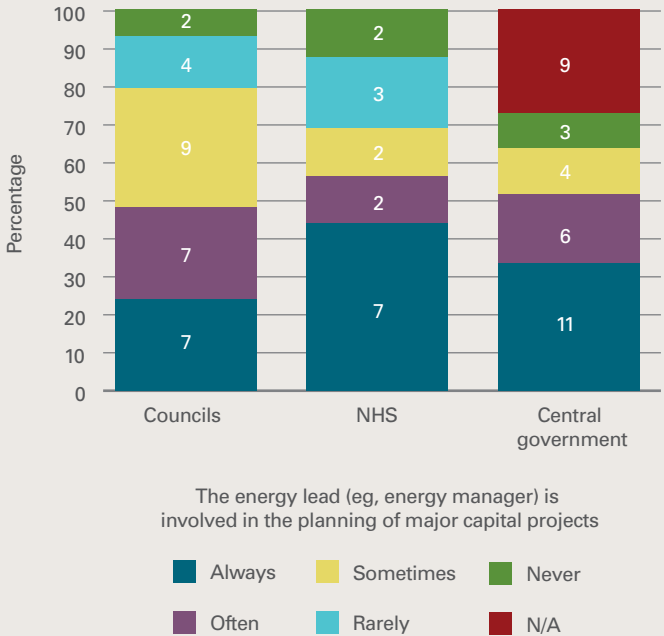
**81.** Involvement of energy management leads in the design of major capital projects helps to ensure that best practice in energy efficiency is incorporated. However, there is a variable degree of input from energy leads to major capital project teams. In 32 per cent of public bodies, the energy lead is always involved in planning major capital projects. In 38 per cent of bodies, the energy lead is often or sometimes involved, but in 18 per cent they are rarely or never involved ([Exhibit 10](#)).

**82.** The majority of public sector emissions are from buildings. Many of these buildings will still be in use in 2050, therefore it is important that energy efficiency best practice is achieved during refurbishments and building projects.

**Exhibit 10**

**Input from energy leads in planning major capital projects**

Energy leads are not always involved in planning major capital projects.



Source: Audit Scotland

among staff. Public bodies should actively seek expert advice and input to design programmes which focus on encouraging changes in culture and staff behaviour

- ensure staff with the necessary skills are made available to support implementation of energy efficiency activities. Formal reporting frameworks should be used to monitor progress against the aims, objectives and targets outlined in energy efficiency strategies
- ensure that energy efficiency is considered in the procurement of goods and services and in the planning and design of major capital projects.

**Recommendations**

The Scottish Government should:

- demonstrate leadership by providing clear guidance for all public bodies on the actions that are required to improve energy efficiency and reduce CO<sub>2</sub> emissions
- establish robust monitoring arrangements to ensure the performance of public bodies in improving energy efficiency can be accurately assessed and reported publicly against national and international targets
- work with the public sector to disseminate good practice, coordinate networks to share information and establish appropriate energy efficiency benchmarks.

The public sector should:

- ensure that effective strategies are in place to improve energy efficiency and reduce CO<sub>2</sub> emissions throughout all areas of public sector activity. These strategies should be supported by comprehensive plans detailing the actions to be taken to achieve agreed objectives and time-related targets
- ensure that senior staff play a key role in improving energy efficiency and reducing CO<sub>2</sub> emissions through leading on the implementation of strategies
- identify and implement a coordinated programme to raise awareness of energy efficiency

# Appendix 1.

## Legislation and policy statements relevant to energy efficiency in the public sector

Scottish
  UK-wide
  European
  International

Date implemented	Legislation/policy	Overview of legislation/policy
To begin January 2010	Carbon Reduction Commitment	This scheme will apply mandatory emissions trading to cut carbon emissions from large commercial and public sector organisations.
Expected by end of 2008	Climate Change Bill (Scotland)	This Bill is expected to have a target of cutting emissions by 80 per cent by 2050. It is expected that the Bill will also propose a mandatory reporting requirement to ensure Scottish ministers are held to account for progress and action.
May 2008	EU Directive on Energy End Use Efficiency and Energy Services	This Directive aims to enhance the cost-effective improvement of energy end-use efficiency. Member states are required to submit annual energy efficiency action plans to the European Commission. It requires more accurate metering and billing to allow customers to make better informed choices about their energy use. The public sector is expected to play an exemplary role for energy suppliers and distributors to promote energy efficiency.
May 2007	UK Government White Paper on Energy	This White Paper sets out the UK Government's framework for action to support progress towards tackling climate change and ensuring secure and affordable energy supplies.
January 2007	Scotland's Climate Change Declaration	This Declaration is a commitment from all councils to both mitigate their impact on climate change through reducing greenhouse gas emissions and to adapt to predicted climate change impacts.
April 2006	HDL (2006) 21 – Environmental Management Policy for NHSScotland	This circular from the Scottish Executive Health Department charged all NHS bodies in Scotland with developing an environmental management policy and adopting a target for the continuing reduction of energy consumption.
January 2006	EU Directive on the Energy Performance of Buildings	This Directive was created to promote the improvement of the energy performance of buildings. Each member state is to set the performance requirements in their national building regulations.
December 2005	Environmental Assessment (Scotland) Act 2005	This Act is a key component of sustainable development which provides a systematic method for early consideration of the environmental effects of public sector plans and programmes, and for meaningful public consultation.

Date implemented	Legislation/policy	Overview of legislation/policy
Entered into force in February 2005 (following agreement in 1997)	Kyoto Protocol	The Kyoto Protocol was established to limit the growth in emissions of greenhouse gases. Under the Kyoto Protocol, industrialised countries and those in transition to a market economy (the 'Annex I countries') have agreed to limit or reduce their emissions of six greenhouse gases.
February 2003	Local Government (Scotland) Act 2003	Under this Act, councils have a duty to deliver sustainable development through the Best Value process.
April 2001	Climate Change Levy	The public and business sectors are subject to a levy tax on their energy use to encourage reduction in demand for energy and improve energy efficiency.
April 2000	MEL (2000) 19 – NHS In Scotland: Energy Consumption Target	This circular from the Scottish Executive Health Department set the target for a two per cent reduction in annual energy consumption from 2001 to 2010.

# Appendix 2.

## Public bodies that completed Audit Scotland's survey

Councils	NHS bodies	Central government bodies
Aberdeen City Council	NHS Ayrshire and Arran	Accountant in Bankruptcy
Aberdeenshire Council	NHS Borders	Cairngorms National Park Authority
Angus Council	NHS Dumfries and Galloway	Crown Office and Procurator Fiscal Service
Argyll and Bute Council	NHS Fife	General Register Office for Scotland
City of Edinburgh Council	NHS Grampian	Highlands and Islands Enterprise
Clackmannanshire Council	NHS Greater Glasgow and Clyde	Historic Scotland
Dumfries and Galloway Council	NHS Lanarkshire	HM Inspectorate of Education
Dundee City Council	NHS Lothian	Loch Lomond and Trossachs National Park Authority
East Dunbartonshire Council	NHS Orkney	Mental Welfare Commission for Scotland
East Lothian Council	NHS Shetland	National Archives of Scotland
East Renfrewshire Council	NHS Western Isles	National Galleries of Scotland
Falkirk Council	NHS 24	National Library of Scotland
Fife Council	NHS Education	National Museums of Scotland
Glasgow City Council	NHS Health Scotland	Office of the Scottish Charity Regulator
Highland Council	NHS National Services Scotland	Registers of Scotland
Midlothian Council	NHS Quality Improvement Scotland	Risk Management Authority
Moray Council	The National Waiting Times Centre Board	Royal Botanic Garden Edinburgh
North Ayrshire Council		Scottish Agricultural Science Agency*
North Lanarkshire Council		Scottish Children's Reporter Administration
Orkney Islands Council		Scottish Commission for the Regulation of Care
Perth and Kinross Council		Scottish Court Service
Renfrewshire Council		Scottish Enterprise
Scottish Borders Council		Scottish Environment Protection Agency
Shetland Isles Council		Scottish Fisheries Protection Agency
South Ayrshire Council		Scottish Funding Council
South Lanarkshire Council		Scottish Government
Stirling Council		Scottish Natural Heritage
West Dunbartonshire Council		Scottish Public Pensions Agency



Councils	NHS bodies	Central government bodies
West Lothian Council		Scottish Qualifications Authority
		Scottish Social Services Council
		Social Work Inspection Agency
		sportscotland
		Student Awards Agency for Scotland
		VisitScotland
<b>29 out of 32 (91%)</b>	<b>17 out of 22 (77%)</b>	<b>34 out of 44 (77%)</b>

Note: \*This organisation was incorporated into the Scottish Government from 1 April 2008.

# Appendix 3.

## Membership of the project advisory group

Member	Organisation
Ron Hill	Property Officer, North Lanarkshire Council Chair, Local Authority Energy Officers Network
Phil Matthews	Senior Policy Advisor, Sustainable Development Commission
Eddie McLaughlin	Assistant Director, Health Facilities Scotland
Trudy Nicolson	Head of Energy Efficiency Unit, Scottish Government
John Stocks	Manager for Scotland, Carbon Trust
George Tarvit	Development Manager, Sustainable Scotland Network
Mike Thornton	Director, Scotland, Energy Saving Trust
Judith Young	Team Leader, Greener Scotland Directorate, Scottish Government

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