

# Section 11

## **ENVIRONMENT AND NATURAL RESOURCES**

Effective protection of the environment and wise use of natural resources is an integral component of sustainable economic development. The regional economy has grown in recent years, enabling its residents to enjoy higher standards of living. However, it is important to analyse the impact of this growth on the environment and the consumption of finite resources. The following section of this document looks at key indicators of environmental quality and resource use in the South East and, where possible, compares its performance with other regions in the country.

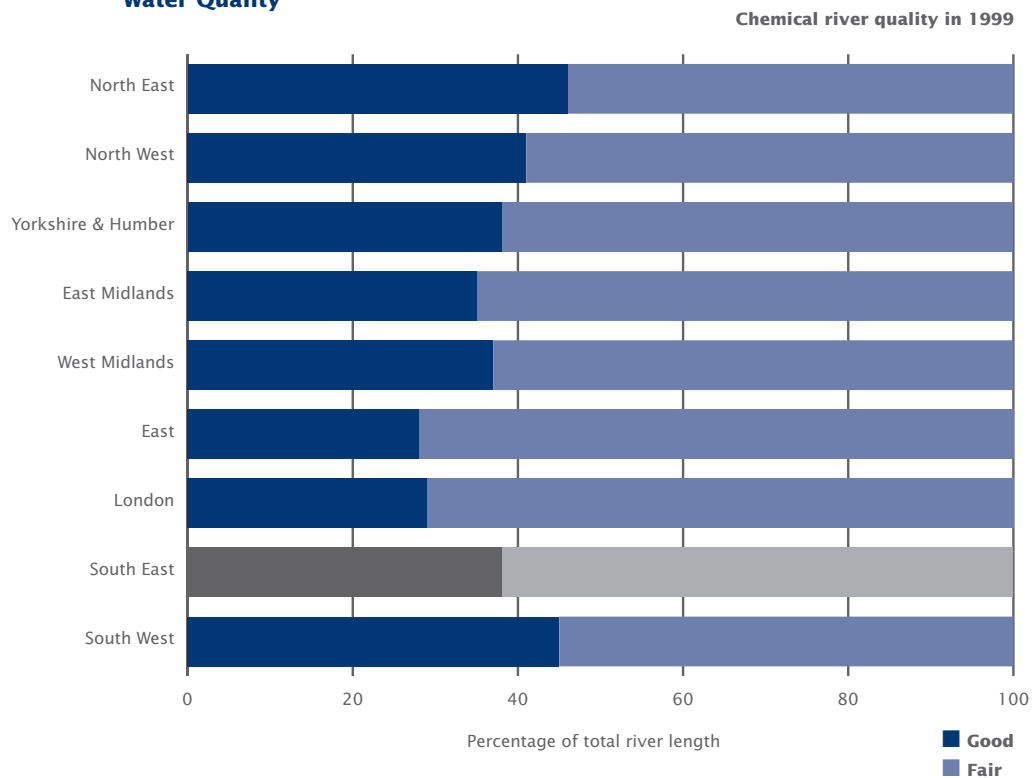
As noted in the Rural Economy section of this document, a high proportion of the land area is covered by environmental/planning designations in the South East. This means that land availability is a crucial constraint and brown field sites must be used to the full. Increasing housing demand fuelled by the region's continuing economic growth is adding to these pressures.

In 1997, 54% of new homes were built on previously developed land compared with 53% for England as a whole. The government target is to increase this figure to 60% for England by 2008. The urban renaissance and housing section deals with some of these issues in more detail.

### **Air and Water Quality**

Assessments by the Environment Agency demonstrate that pollution levels in the region are declining, broadly in line with national trends. However, air pollution (ground level ozone concentration) in rural areas remains high.

**FIGURE 45**  
**Water Quality**



Source: ONS, 2000

### Pollution

Measured by the number of days when air pollution is moderate or high, the highest levels of ozone concentration are found in rural areas of the South East.

The quality of both rivers and canals in the South East has improved during the early-mid 1990s. As shown in the chart, chemical river quality as a percentage of total river length in the region was better than the average for England.

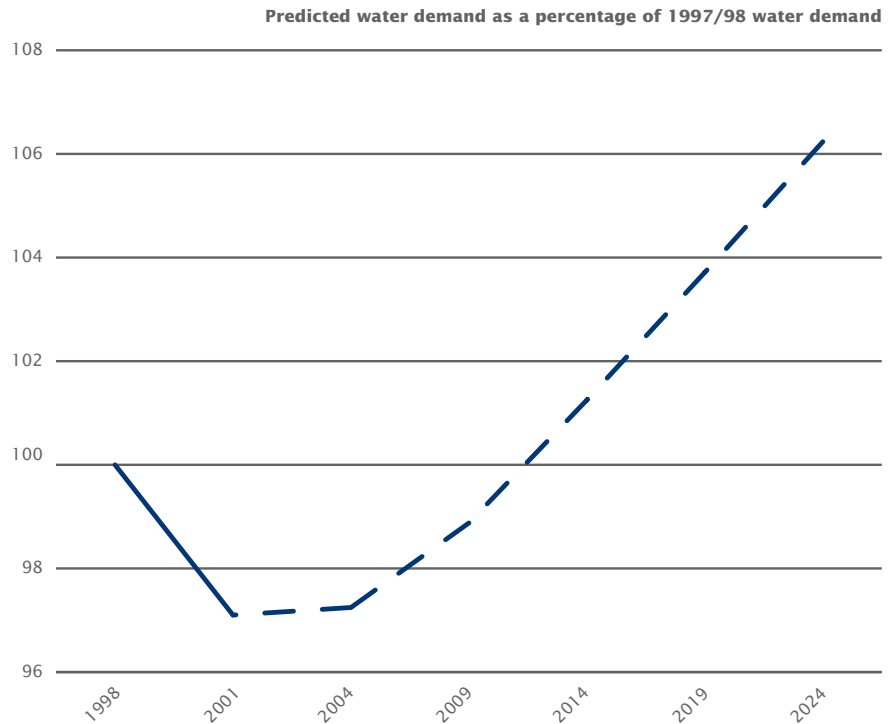
<sup>1</sup> *A Better Quality of Life in the South East, The Regional Sustainable Development Framework, 2001*

Bathing waters are also becoming cleaner. In 1997-9 only 1.3% of coastal bathing waters failed to comply with the EC Bathing Waters Directive compared with 18.5% in 1988-90 (3 year periods)<sup>1</sup>.

### Water

The issue of water supply may become a developing constraint in some parts of the region and per capita demand for water is rising (see Figure 46). Groundwater is the most important source of water in the region, both for domestic and commercial use, and for supplying our rivers and wetlands. Compared with other regions, rainfall is low in the South East, while the population density and per capita consumption of water is high, particularly in periods of peak demand. Expected future economic and housing growth will have a significant impact on the availability and use of water resources. Water is a scarce and often over-committed resource in the region, and opportunities for sustainable water resource developments are limited - this underlines the importance of increasing efficiency in water use in the region over the next 25 years.

**FIGURE 46**  
**Water Demand**



Source: *The Environment Agency, 2001*

<sup>2</sup> *State of the Environment, 2001, Environment Agency*

### Waste

The generation of waste has increased, on average, in line with wealth. The production of municipal waste, for example, is growing at 3% per annum in the South East. In 2000, the region produced approximately<sup>2</sup>:

- 13 million tonnes of construction and demolition waste;
- 9 million tonnes of industrial and commercial waste;
- over 4 million tonnes of municipal solid waste;
- 4.9 million tonnes of agricultural waste;
- 723,000 tonnes of 'special' waste (including clinical and hazardous waste).

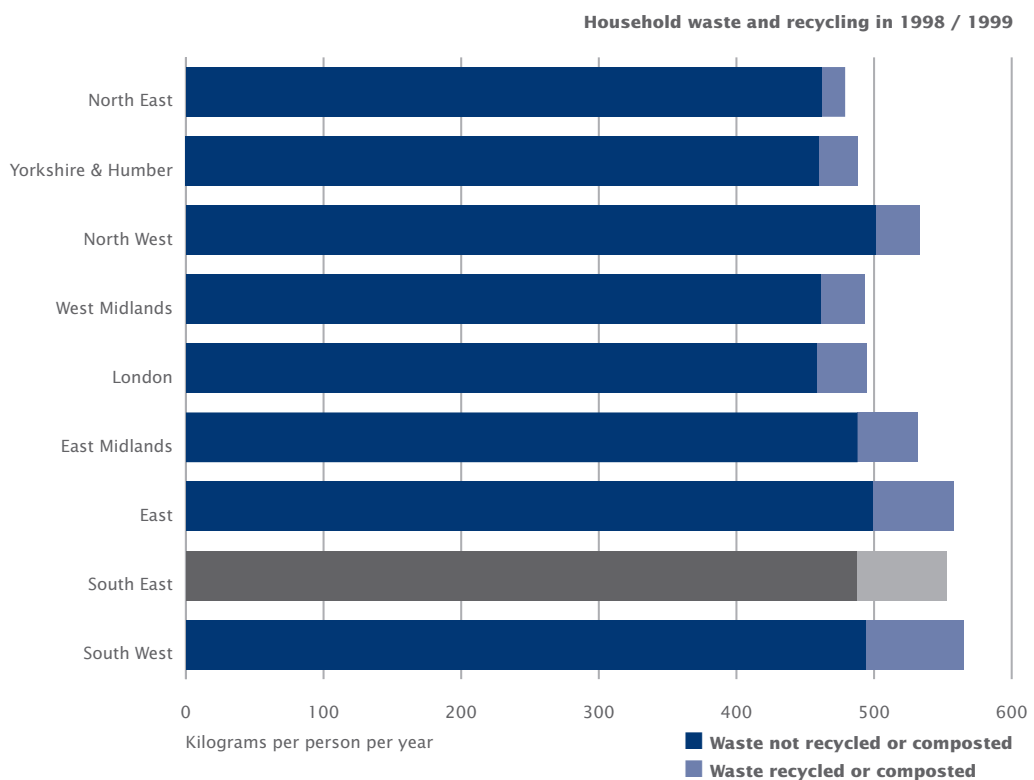
Currently the majority of this waste is landfilled, although an increasing proportion is recycled (23% of construction and demolition waste, 28% of industrial and commercial waste and 12% of municipal solid waste).

While landfill sites are in relatively short supply (at current usage levels, existing regional capacity is sufficient to last less than 7 years), the region remains a net importer of industrial and commercial waste.

The EU Landfill Directive aims to achieve a gradual reduction in the amount of waste landfilled, with an ultimate target by 2020 of the equivalent of only 35% of the quantity of waste landfilled in 1995. Significant changes in the approach to waste management in the region will be needed if this target - and intermediate targets for 2010 and 2013 - are to be met.

Other EU Directives on waste electrical equipment, batteries, waste oils, refrigeration equipment and end-of-life vehicles will serve as further drives for changes in the management of waste.

**FIGURE 47**  
**Household Waste and Recycling**



Source: ONS, 2001

### Climate Change

Climate change will have significant impacts on the South East Region, and the South East Climate Change Partnership has been set up, with SEEDA's help, to raise awareness of the likely impacts of climate change, so that they may be appropriately factored-in to forward planning. While the need to adapt to climate change will affect the current pattern of business in the region, adaptation will also open up new business opportunities. Extensive flooding in several parts of the region during 2000 highlighted the need for effective contingency planning by the region's businesses.

**Marine Environment**

Of the total South East coastline, 72km is designated Heritage Coast (7% of the national total). Many of the Region's internationally recognised wildlife sites are located in the coastal zone, including 8 candidate Special Areas of Conservation covering 38,389 ha and 8 Special Protection Areas for birds covering 32,584 ha. Some 3,800 ha of these sites also lie within National Nature Reserves. The South East is of particular importance for coastal vegetated shingle, with 49% of the UK's total resource.

Pressure on priority wildlife habitats, especially coastal grazing marsh, saltmarsh and intertidal mud, is increasing as a consequence of sea level rise and development along the coastline. Extraction of marine aggregates is likely to increase with the increasing demand in relation to coastal defences.

<sup>3</sup> *Source: State of the Environment 2001, Environment Agency*

More than 230,000<sup>3</sup> properties are at risk from tidal flooding in the South East. It is expected that climate change will lead to an increasing risk of breaches in sea defences, due to the combined effects of greater frequency of storms, changes in wave direction and rising sea level.

The water quality of discharges at the coast is thought to be improving although the scale and effectiveness of the improvement is not known.

**Energy Use and Renewable Energy**

While fossil fuels are likely to continue to meet the major part of the region's energy needs over the next decade, their use generates greenhouse gases, which constitute the principal contributor to global warming; not unexpectedly, therefore, the use of fossil fuels is increasingly subject to regulation and fiscal penalty (although 'carbon trading', operational from 1st April 2002, offers a degree of flexibility).

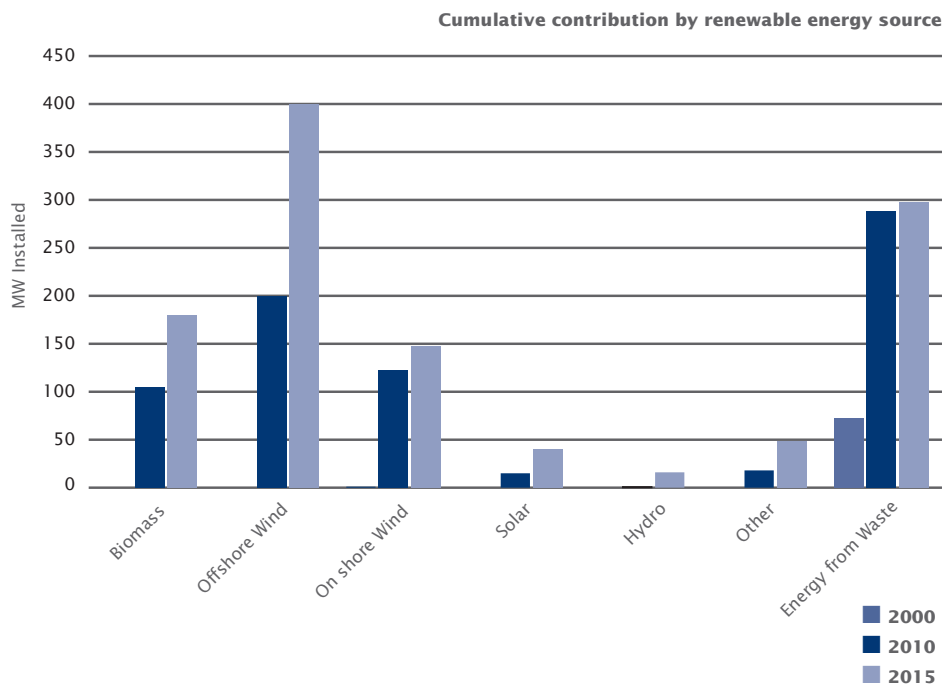
An assessment of the region's renewable energy potential undertaken on behalf of GOSE (March 2001 ) identifies renewable energy resources and targets for renewable energy generation to 2010 and 2015. The figures are summarised in the Table 14.

**TABLE 14**  
**Renewable Energy Technology**

Renewable Energy Technology	2000	2010	2015
Biomass		105	180
Offshore Wind		200	400
Onshore Wind	1	123	148
Solar		15	40
Hydro		1	16
Other		18	48
Energy from Waste	72	288	298
TOTALS (MW)	73	750	1130

Source: ETSU/AEA Technology plc and Terence O'Rourke plc (2001). Development of a Renewable Energy Assessment and Targets for the South East. Final Report

**FIGURE 48**  
**Cumulative Contribution by Renewable Energy Source**



Source: ETSU/AEA Technology plc and Terence O'Rourke plc (2001). Development of a Renewable Energy Assessment and Targets for the South East. Final Report

The 750MW target would represent 6.6% of the region's electricity being generated from renewable sources by 2010. However, it should be noted that almost 40% of this is energy from waste, not all of which would be likely to qualify as "renewable" under the terms of the Government's Renewables Obligation. The 2015 target of 1130MW represents 10% of the region's electricity generation, reflecting the UK national target. These figures are included in the Regional Sustainable Development Framework.

The current level of energy generation from renewable sources, at 73MW (equivalent to 0.6% of electricity generation), is one of the lowest proportions of all the English Regions.

### **The Environmental Economy**

The Environmental Economy comprises a range of activities with strong links to the environment. It includes activities that are directly dependent on the environment such as agriculture and forestry, those that depend on a high quality environment such as tourism, and those that contribute to a high quality environment, such as the environmental technologies.

Research commissioned by SEEDA has concluded that these activities collectively account for around 230,000 jobs in the South East region (5.5% of the Region's total employment), of which over a third is contributing towards a high quality environment. The Environmental Economy is therefore larger than other sectors that have a much higher profile: financial services, for example, accounts for 138,000 jobs while mechanical engineering accounts for 51,000. It contributes over £7.8 billion GVA to the South East Economy, equivalent to just over 6% of the total regional economy.

Northern and western parts of the region, particularly parts of the Thames Valley, show a developing expertise in high value-added activities, notably environmental technologies. By contrast, the focus in the south and east of the region is on activities that capitalise on a high quality environment such as tourism and primary industries such as agriculture. The research is continuing, but indicates that improving the performance of the Environmental Economy could do much to boost the performance of the region as a whole.

Although market penetration of renewable energy technologies has been somewhat limited in the South East, regulatory and fiscal drivers, coupled with government financial incentives, are likely to lead to a significant increase in the use of renewable energy in the region over the next decade. Forecast growth in national and overseas markets for renewable energy technology will drive innovation and present opportunities for both new and existing companies in the region.