

REWARD

***Regional and Welsh Appraisal of
Resource Productivity and
Development:***

A Baseline Assessment

Foreword and Executive Summary

Foreword



Alan Johnson MP

Minister of State for
Employment Relations,
Industry and The Regions



Sir John Harman

Chairman of The Environment
Agency



Sir Graham Hall

Chair of The Regional
Development Agencies'
Chairs Group

Promoting resource productivity is a key element in the Government's drive for sustainable development. Resource productivity measures the efficiency with which the economy generates wealth by using natural resources, including the capacity in the environment to absorb waste and pollution. It means getting more from less. Its promotion will form a major part of the Government's Sustainable Consumption and Production strategy which is being developed as part of the UK's response to its commitments made at the World Summit for Sustainable Development in September 2002.

Promoting resource productivity requires government and business to work closely together. Much of this work does and will continue to happen at the national level. However there is also a need for action at the regional level which is already being recognised as shown by the range of innovative initiatives described in this Report. At the regional level, there is huge potential, particularly through development agencies, for close co-operation with business to reap the rewards of resource productivity in increased profits and reduced environmental impacts. Promoting resource productivity is also integrated into Regional Economic Strategies as part of the response to the Regional Development Agencies' statutory duty to contribute to sustainable development.

We therefore very much welcome the regional contribution to promoting resource productivity and the REWARD project, which seeks to engender and support it.

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Handwritten signature of Sir John Harman in black ink.

Handwritten signature of Sir Graham Hall in black ink.

Executive Summary

This first ever study of regional resource productivity sets out the current picture of resource use in key industries and shows the potential for environmental and economic improvements. It shows, for example, that the construction industry in the North East, Yorkshire & the Humber could make dramatic improvements in energy efficiency, and could cut water use (and therefore cost) by 50% if they matched the best performance in London, the South East and the East. The study also reveals that the Welsh food industry has a particularly poor record, while the potential for Welsh companies to save money by cutting waste seems high in several sectors.

The REWARD study makes such comparisons possible for the first time, by presenting regional data on environmental impact per unit of economic value added. This will help regions in three ways:

- Identifying the current best performance levels as an improvement target
- Identifying the potential to shift to an economic structure which combines higher standards of living and a higher quality environment
- Acting as a baseline to assess performance over time

Resource productivity is critical to the government's aim of decoupling economic growth from environmental degradation. The objective is to use fewer resources to create more wealth with less pollution and waste. This is part of the government's commitment to sustainable development, but also the strategy for a competitive economy – businesses which use resources more productively will be more profitable and more competitive.

The potential for improvement is dramatic. A separate study^{*1} based on 65 real-life case studies estimates that best practice could yield savings across the economy of £2 - £3 bn. This amount could roughly double if the costs of processing materials that end up as waste were included. The greatest potential is in the chemicals and food and drink sectors and in the North West region, where savings could be nn per cent of gross value added.

The regional approach adopted in this study fits with the government's approach of giving Regional Development Agencies (RDAs) responsibility to contribute to sustainable development. RDAs have each developed strategies to improve the regional economy through better business performance and addressing issues which prevent sustainable economic development. These include limiting negative impacts, but also recognising the opportunities in an environmental economy. For example, the One North East strategy has identified innovation in product design as a means of reducing waste, and aims to develop an Environmental Industries Cluster to promote business opportunities.

Regions have supported this REWARD study, which produces consistent regional data linking economic activity and environmental impacts from key economic sectors, and enables comparisons across regions.

Four environmental impacts of industrial sectors have been used as key markers of resource efficiency – waste arisings, emissions to air, water consumption and energy use. Further detailed analysis has been done for eight sectors, including power generation. The other sectors, chosen for their importance to regions across England and Wales, and for the importance of the four environmental impacts in them, are:

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|--|---------------------------|
| Cement and other non-metallic mineral products | Public sector and defence |
| Chemicals | Professional services |
| Construction | Retail |
| Food and drink | |

¹ The Benefits of Greener Business: The Cost of Unproductive Use of Resources – www.environment-agency.gov.uk

Regional comparisons are based on an index, which expresses the environmental impact in relation to the gross value added (GVA) by the industry. The different composition of sectors across regions as well as variations in data quality and detail will account for some of the differences, so the figures can only be indicative at this stage, but they provide a basis for further inquiry, as well as a baseline for measurement of progress in future.

Key findings in each sector are as follows:

Power – significant variations in sulphur dioxide (SO₂) and nitrous oxide (NO_x) emissions per gigawatt-hour produced, even within regions and within sub-sectors such as combined cycle gas turbine (CCGT) plant. If the best performance was matched in CCGT, the worst polluters (E Midlands) could reduce carbon dioxide emissions by almost half and NO_x emissions by more than 80%. Coal-powered stations in the North West could reduce CO₂ emissions by a quarter and SO₂ by threequarters, by matching the best performer.

Non-metallic minerals – air emissions data suggest significant improvements could be made by the industry in the North East, E Midlands and Wales.

Chemicals – emissions of volatile organic compounds (VOCs) in the north east are significantly out of line with other regions. But the South West, which has a good record on VOCs, has the worst water use figures. Yorkshire & the Humber has three times the waste per GVA as the best performer – the south east.

Construction – the North East, Yorkshire & the Humber could both cut energy use by about 40% if they matched London, the South East and East. Water use in these regions is also significantly different.

Food and drink – the East of England, the North West and Wales appear to use energy less efficiently than elsewhere, while the North East and Wales are bottom of the water league and there is more waste per GVA in the Welsh food and drink industry.

Public administration and defence – there is much less variation in this sector's energy use. By removing the Defence element from the statistics, due to its predominance in southern England, it is apparent that the worst performers in Public Administration (South West, Yorkshire & the Humber) could improve energy use by more than 10% if they matched the best (East and West Midlands). Water figures are much more disparate, with usage per GVA in the North East more than double that in the East of England.

Professional services - waste per GVA in Wales is more than double that in London and the East of England.

Retail – companies in the North East, South West and Wales could cut water use by 40% if they matched competitors in the East of England. Wales also has a poor waste record in this sector.

Regions are already working to improve resource productivity in many ways which are highlighted in this report. For example:

The Humber Industrial Symbiosis Project aims to help companies in the sub-region become more competitive by innovating around waste management and resource efficiency, sharing knowledge and using software to improve resource flows.

ENWORKS, in the North West, will help improve companies' competitiveness through a six-year programme that brings together business and environmental expertise to tackle energy efficiency, waste minimisation and pollution reduction, and to promote environmental management systems and cleaner technologies.

The North East Centre for Environmental Science and Industry (NECESI), based at the University of Durham, will provide environmental advice and technology support to small and medium businesses in the region, facilitating the transfer of environmental and R&D expertise at the University.

The baseline data provided by the REWARD study will assess the success of such initiatives in contributing to the government's sustainable development strategy.